RATIO ANALYSIS IN A REAL-WORLD SETTING: CRITICAL THINKING PERSPECTIVE

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ABSTRACT

This paper presents a financial ratio analysis case in which the two companies analyzed have some financial anomalies which enrich the potential discussion for a broad range of accounting courses. These anomalies allow the class discussion to go well beyond the basic calculation and analysis of financial ratios. The anomalies provide an environment in which critical thinking skills can be applied at multiple different levels, depending on the level of the course in which the case is used.

INTRODUCTION

Ratio analysis has long been an integral part of accounting education. Accounting students from introductory courses up to graduate courses learn to compute and analyze ratios as a means of interpreting the information found in financial statements. While this practice is valuable and should be continued, caution should be taken to avoid the over-simplification of financial statement analysis. Without proper critical thinking instruction and training, students may falsely assume that once financial ratios are computed, there is no need for any additional information from the financial statements and the accompanying footnotes. The following case uses real-world financial information that can be used to illustrate to students the importance of critically evaluating all of the information found in the financial statements and to not solely rely on the financial ratios themselves.

The case uses financial statement and footnote information from two companies in the same industry—OfficeMax, Inc. [1] and Staples [2]. Depending on the level of the class in which this case is used, more or less information can be provided to the students. At a minimum, the students will need the comparative financial statements for these two companies from the fiscal year 2012 annual reports. For deeper analysis, additional footnote information may be needed. The instructor can choose whether to provide this information (more likely for an introductory course) or to require the students to access the information electronically. Students can access this information by obtaining copies of each company's 10-K filings with the SEC either through the company websites or through the SEC's EDGAR website. One advantage of having the students access the information on their own is the benefit of making sure they know how to find the 10-K statements online. Another advantage of students finding the information is that they will have to look through the 10-K statements to find the financial statements; they will also need to determine which footnotes are relevant to the issues addressed by this case.

Students are asked to use the financial statement information to calculate a series of common financial statement ratios and perform a simple financial statement analysis using their results. This case can be used at the introductory financial accounting level, the intermediate accounting level, or the graduate level. The variation comes in the depth of the discussion following the initial analysis due to the level of critical thinking with respect to the companies' 2012 income statement anomalies.

The next section includes the case material and requirements. Following the presentation of the case, a Teacher's Note presents the financial ratios for both a single year and for comparative years. The Teacher's Note also indicates how this case can be used in different levels of the accounting curriculum to show an increased use of critical thinking requirements as students gain a better background in their accounting classes. The Teacher's Note is followed by a short conclusion section.

CASE

OfficeMax vs. Staples
A Financial Ratio Analysis

Instructions:

The purpose of this assignment is to give you an opportunity to apply financial ratio analysis tools to real-world financial statements. The following pages include copies of the primary financial statements and select footnotes for OfficeMax, Inc. and Staples. [These statements and footnotes are not provided in the proceedings but could be provided to the students. If you choose to have the students access this information on their own, you can provide as much or as little information as you want to direct the students to appropriate sources/sites.] Using the provided financial information, calculate the following ratios for the 2012 Fiscal Year: Current Ratio, Accounts Receivable Turnover Ratio, Inventory Turnover Ratio, Gross Profit Percentage, Profit Margin, Return-on-Assets, Return-on-Equity, and Debt-to-Assets Ratio.

After computing the ratios, use the ratios to infer the relative health and profitability of both companies. Use the information to answer the following questions. Make sure to support your answers with solid analysis and information.

1. Which company has better liquidity?
2. Which company is better at collecting its receivables?
3. Which company is better at managing inventory?
4. Which company is more profitable?
5. Which company has better solvency?
6. Which company would you recommend as an investment?

TEACHER'S NOTE

This case can be used at the introductory financial accounting level, the intermediate accounting level, or the graduate level. The variation comes in the depth of the discussion and level of critical thinking expected following the initial analysis. The required ratio solutions are provided below, both for a single year and for a comparative analysis.

Ratio Solutions

Single Year Analysis

	Staples 2012	OfficeMax 2012
Current Ratio	1.40	1.88
AR Turnover	12.67	12.73
Inventory Turnover	7.54	6.28
Gross Profit Percentage	26.62%	25.79%
Profit Margin	-0.86%	6.02%
ROA	-1.72%	11.01%
ROE	-3.43%	40.29%
Debt-to-Assets	50.03%	72.67%

Multiple Year Analysis

	Staples			OfficeMax		
	2012	2011	2010	2012	2011	2010
Current Ratio	1.40	1.54	1.51	1.88	1.91	1.93
AR Turnover	12.67	12.32	12.25	12.73	12.88	13.07
Inventory Turnover	7.54	7.50	7.46	6.28	6.37	6.26
Gross Profit Percentage	26.62%	27.12%	27.08%	25.79%	25.41%	25.87%
Profit Margin	-0.86%	3.99%	3.65%	6.02%	0.49%	1.00%
ROA	-1.72%	7.33%	6.34%	11.01%	0.86%	1.74%
ROE	-3.43%	14.02%	12.69%	40.29%	6.13%	11.84%
Debt-to-Assets	50.03%	47.71%	50.03%	72.67%	86.02%	85.27%

Introductory Level

The ratio results from this particular year yield mixed conclusions. OfficeMax is more liquid (higher current ratio), is slightly faster at collecting receivables, and has higher profitability measures. However, OfficeMax has a much higher debt-to-assets ratio that is very high for the industry (72.67%). Staples, on the other hand, is more efficient at managing its inventory levels, has a higher gross profit percentage, and a lower, more reasonable debt-to-assets ratio. However, Staples also experienced a net loss for the year which causes all profitability measures to be negative.

These mixed results can generate a valuable discussion about what information each ratio provides and how to weigh each piece of information in arriving at an overall conclusion. This one year picture doesn't provide a concrete answer, but most students lean towards OfficeMax due to the liquidity and profitability measures.

Expanding the analysis to multiple years allows the students to see that the year 2012 isn't a typical year for either company when it comes to profitability. OfficeMax showed abnormally high profitability measures compared to the prior two years, while Staples showed abnormally low profitability measures. These results and the accompanying discussion solidify in the students' minds the importance of looking beyond just one year of financial information.

At the introductory level, the following points can be emphasized:

- Value of ratio analysis

- Value in making comparisons to similar companies
- Weighting of ratio information in light of mixed results
- Importance of multiple year analysis

Intermediate Level

In addition to the points mentioned above for the Introductory Level, the case is robust enough to provide critical thinking opportunities beyond the basic ratio analysis computations. Specifically, intermediate students should be able to identify the abnormal profitability results for 2012 and that should push them to examine the financial statements in order to discover the cause of the abnormalities. Careful examination of the 2012 income statements of each of the companies yields some answers.

The comparative income statements for OfficeMax show very similar numbers for most of the line items across the three year period, except for one item. OfficeMax reports a "gain on extinguishment of non-recourse debt" in the amount of $670,766,000. This one-time event had a significant impact on the profitability of OfficeMax for the year and the company would have reported a Net Loss had the gain not been recorded.

The comparative income statements for Staples also show very similar numbers for most of the line items across the three year period, except for a couple of items. Staples reports an "impairment of goodwill and long-lived assets" of $810,996,000 and "integration and restructuring costs" of $207,016,000. These items had a significant impact on the profitability of Staples for the year and the company would have reported positive Net Income in similar to that of the prior years had these write-downs and costs not been recorded.

At the intermediate level, the following points/questions can be emphasized:

- Importance of examining the entire set of financial statements instead of just summary numbers often used in ratios.
- Importance of identifying abnormalities between years
- The passing of FAS 145 removed the requirement that debt extinguishments be reported as extraordinary gains. Would extraordinary gain presentation provided a more transparent set of financial statements in this case?
- Does the existence of gains always result in positive information about the company moving forward?
- Does the existence of write-downs of goodwill and long-lived assets or of restructuring costs always result in negative information about the company moving forward?

Advanced or Graduate Level

The case can be used to introduce an even higher level of critical thinking as students examine the footnotes to understand the nature of these abnormalities. The footnote disclosures provide substance and background to the numbers listed on the income statement.

By reading the OfficeMax footnotes 4 and 5, students will be introduced to a fairly complex set of transactions that were undertaken primarily to defer tax payments resulting from the sale of some timber assets held by the company back in 2004. The transaction included OfficeMax receiving an installment receivable (backed by Lehman Brothers and Wachovia Corporation) due in 15 years in lieu of cash up front. OfficeMax then securitized its claim in the installment receivable and sold that claim to a SPE subsidiary resulting in the existence of both an asset (installment receivable) and a liability (the securitized claim) on OfficeMax's balance sheet.

When the financial crisis caused the failure and subsequent bankruptcy of Lehman Brothers in 2008, OfficeMax was forced to write-down the value of the installment receivable for the portion owed by Lehman Brothers. However, due to the lengthy bankruptcy proceedings, OfficeMax was unable to remove the corresponding non-recourse liability from its books until a judge granted them permission in 2012.

By reading the Staples footnotes, students will discover the nature of the write-downs of goodwill and long-lived assets as well as the restructuring transactions (see footnotes B and C). The European operations of Staples had been experiencing significant declines in recent years due to political instability in the region as well as industry trends in the area. Staples made a series of strategic decisions to reduce its retail store footprint in Europe and focus more on a presence in the growing online market in the area. These strategic restructuring decisions resulted in the recording of impairment charges against goodwill and long-lived assets associated with their European retail operations.

At the advanced or graduate level, the following points/questions can be emphasized:

- While the tax deferral transaction was legal, is it proper and ethical?
- What was the true effect (if any) on OfficeMax's profitability due to the gain reported in 2012? What does the transaction suggest about the future?
- Accounting standards require that anticipated losses be recorded immediately (such as the write-down of the receivable in 2008). However, the standards are slow to remove liability obligations and corresponding gains. What effect did this four year delay likely have on the informativeness of the 2008 and 2012 financial statements?
- Students can discuss and come to understand the proper accounting for securitizations and special purpose entities.
- Students can discuss and come to understand the proper accounting for impairments and restructuring charges.
- What was the true effect (if any) on Staples' profitability due to the impairment and restructuring charges reported in 2012? What do the transactions suggest about the future?

CONCLUSION

This financial ratio analysis case provides a rich set of topics which can be discussed, depending on the level of the course in which it is used. Because of the anomalies in the financial statements for the particular years and companies selected, critical thinking skills can be emphasized even at the introductory level. However, the Teacher's Note has suggested an increasingly complex set of topics for critical thinking and discussion for higher-level accounting courses.

REFERENCES

[1] OfficeMax. (2013). Form 10-K for the fiscal year ended December 29, 2012. Retrieved from http://www.sec.gov/edgar.shtm.

[2] Staples. (2013). Form 10-K for the fiscal year ended February 2, 2013. Retrieved from http://www.sec.gov/edgar.shtm.