An Integrated Approach to Teaching Financial Statements Analysis Using Bloomberg and Thomson Reuters

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ABSTRACT

In an information age where data is currency, it is critical for students to have the skills to access, manipulate, analyze and interpret real-market data. The use of Bloomberg and Thomson Reuters in business education has become a priority for universities in order to equip their students with a competitive edge in today’s job market. This paper discusses a project for financial statements analysis using Bloomberg and Thomson Reuters. The project has proven very helpful for students to learn how to effectively use Bloomberg and Thomson Reuters for conducting a financial statement analysis. The paper provides the steps for faculty to develop an effective learning experience, closing the gap between theoretical knowledge and the expectations of the 21st century workplace. The project also supports the implementation of the learning framework to address the spirit and intent of the AACSB business and accounting standards related to information technology skills and knowledge.

Keywords: Bloomberg; Finance Education; Accounting; Technology-Based Assignment; Trading Room; Instructional Resources; Project Sample.

1. INTRODUCTION

In an information age where data is currency, it is critical for students to have the skills to access, manipulate, analyze and interpret real-market data. This paper provides a project for financial statements analysis using Bloomberg and Thomson Reuters. The project has proven very helpful for students to learn how to effectively use Bloomberg and Thomson Reuters for conducting a financial statement analysis project and for faculty to develop an effective learning experience closing the gap between theoretical knowledge and the expectations of the 21st century workplace. The project also supports the implementation of the learning framework to address the spirit and intent of the AACSB business and accounting standards related to information technology skills and knowledge (AACSB 2017).
Given economic uncertainties and changes in the regulatory environments, businesses must adapt to stay profitable. To do so, they are adopting big data analytics, using cutting-edge software with real-market data, and they need skilled employees ready to function in this ever-changing environment.

If the university goal is to prepare students for their future careers in the real world, the question is: are our students well equipped or not? What needs to change? How do we all do it? Bringing Bloomberg and Thomson Reuters into the curriculum gives students hands-on experience with a set of tools used by business professionals on daily basis, providing a competitive edge in today’s job market.

To our knowledge, there aren’t too many examples of integrating real market data and analytics in accounting and finance courses. Our paper provides a project assignment available to accounting and finance instructors to help them integrate Bloomberg and Thomson Reuters into the business curriculum. It’s been taught in the Financial Services Lab successfully in undergraduate and graduate courses at American University’s Kogod School of Business.

This paper will assist professors by providing them with a project on how to use Bloomberg and Thomson Reuters, and help students solidify their understanding of theoretical knowledge by applying it to a real life scenario. The students will learn how to effectively find information on particular topics in finance and accounting, how to collect and manipulate critical data in Excel from Bloomberg and Thomson Reuters, how to complete a project that describes and demonstrates students’ investigation, and how to compare the results to the market response.

As the business models evolve and businessmen, investors, and regulatory bodies look toward even more quantifiable solutions, students must also evolve from simply accessing research resources to developing more targeted and tailored analysis using real data and analytics that fits specific strategies.

With this project, both faculty and students will better understand that they will need better tools for measuring the performance of their research. They will also learn that their research needs to justify their investments, evaluate data providers, and drive future planning using data accessed through tools such as Bloomberg or Thomson Reuters.

The paper is organized as follows: Section 2 provides a literature review on the use of financial technologies in teaching business courses. Section 3 introduces a new teaching-learning curriculum innovation and presents an overview of Bloomberg Professional and Thomson Reuters financial technologies along with their importance, advantages and challenges in integrating them. Section 4 explains the project and provides the guidelines and step-by-step instructions of how to use Bloomberg and Thomson Reuters to complete all the steps of the project. Section 4 also demonstrates how to use Excel to retrieve and manipulate critical data necessary for conducting the analysis and it provides faculty with a list of questions for reinforcing the concepts. Section 5 provides a summary and conclusion.
2. LITERATURE REVIEW

In a fast paced society, university professors, university administrators and employers must constantly engage in a healthy debate about what skills employers most need from business school graduates. Students should learn a variety of skills that insure their employability. Wagner (2008) interviewed a large cross-section of business and industry leaders and concluded that critical thinking and problem solving skills were at the top of the survival skills employees need. In a study commissioned by Bill and Melinda Gates Foundation (2011) 69% of respondents rated “the ability to analyze and synthesize information” being very important along with 82% for “critical thinking and problem solving”.

For learning to take place, other researchers showed that critical thinking needs to be done in a real world setting whenever possible, posing and solving problems that are authentic in nature (Lipman, 1988; McPeck, 1990). In 2012, Forbes Magazine reported that the number one job skill employers are looking for is critical thinking (Casserly, 2012). Other skills that are important to employers are: team work, communication, work ethic, technology skills, information literacy.

In today’s information age, business education must give importance to information technology skills. In 2016, PwC surveyed leaders across all businesses who were concerned with the speed of technological change having a disproportionate effect on financial services (PwC’s Global CEO Survey, 2016). The FinTech disruptors in consumer banking, wealth management, and regulatory framework -- along with customers gravitating towards low fees, and convenience – force the traditional banking system to change at a fast speed or fall behind. In this dynamic situation, companies need skilled employees with critical thinking skills who are able to synthesize rapidly changing data.

In order to provide an environment for this sort of skill development, business schools are adopting financial service labs. In 2008, there were only 45 university financial services labs in the world. In 2016, 345 specialized financial labs were actively operating in American and Canadian business schools according to a survey by Rise Display (Exhibit 1). With financial services labs more numerous, the key differentiating factor is not just to have one, but using it effectively. Although all labs have a physical space, hardware, and more or less same software applications, the key is to have a director who will integrate the financial services lab into the business curriculum.

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**Exhibit 1**

*Business Programs and Finance Labs in North America*

1617 US Schools + 105 Canadian Schools = 1722 schools offering a business degree

20.03% of business programs in North America have a Finance Lab

There are 365 Finance Labs in North America (United States & Canada)

*Student Managed Funds*

55% of finance labs have a student managed fund

100 Schools with labs have confirmed they have a student managed fund and of those 112 have shared their current balance with us showing over $275 Million under management. The average fund is approximately $29M with the 5 largest being:

- U of Minnesota - $50M
- U of Dayton - $31M
- U of Texas - Austin $18M
- U of Arkansas - Fayetteville $18.5M

*Source: Rise Display, 2016*
Understanding how to access and apply the appropriate data is a critical element of success. Makani-Lim, Agee, Wu, & Easter (2014) shows that “the time spent for and not finding the information to do their job is a huge drain on employees’ productivity and company resources”. De Saulles (2007) demonstrates that a lack of information literacy skills in the workforces leads to unsuccessful searches and wasted time and effort.

Some researchers emphasized that relating information literacy to a particular discipline provides a more valuable learning experience. Faculty have the responsibility of teaching those skills that are required for subject-specific inquiry and research (Grafstein, 2002; Roldan & Wu, 2004).

Knowing where and how to find critical data is often the answer to a successful business decision. As students struggle with the complexities of business realities, they must know how to access, provide, analyze and interpret data, and then apply problem solving skills to make optimal decisions. Literacy in financial technologies helps them enhance their employment opportunities.

The two providers of real market data and analytics -- Bloomberg Professional Service and Thomson Reuters -- offer financial professionals access to a top-of-the-line financial, regulatory, and market database. Activities users most commonly subscribe to their services are: analyst recommendations, earnings estimates, company fundamental data, stocks, fixed income securities, options, calendar actions, US economic surveys and releases, M&A, news and deals.

Bloomberg owns Business Week magazine. Thomson Reuters provides risk and compliance information, legal information (West Law) and intellectual property information (IP and Science). While Bloomberg is still the fixed income king, energy traders use Thomson Reuters.

Bloomberg has been voted Best Market Data Provider (Vendor) for an unmatched 14 years in a row. Thomson Reuters still dominates the market for Best News Provider, Best Data Provider for Derivatives and Foreign Exchange (Inside Market Data, 2015).


The full integration of Excel in Bloomberg and Thomson Reuters and the use of applications focused on databases increase student’s retention and critical thinking abilities (Bertheussen, 2014, Ragland and Ramachandra, 2014; Willis, 2016).

Croushone and Kazemi (2014) illustrate the use of Bloomberg terminal in economics courses by emphasizing that “students learn about data and economic events better when they can put their hands on the data or manipulate it”. Bryan Schmutz (2017) provides a series of examples using Bloomberg for an introductory finance class.

Because student academic performance and learning outcomes are positively correlated to student engagement (Carini, Kuh, and Klein (2006), Excel based assignments and projects help students understand the concepts, make appropriate connections, engage them in the classroom, and most importantly prepare students for modeling real business problems (Zhang, 2014).

Knowing how to find and retrieve data, export it to Excel and quickly manipulate it leaves more time for comprehensive analysis and better decision-making. Only a proper balance between
theory and practical applications will give students the competitive edge they need to compete in today’s labor market.

3. INCORPORATING THE PROJECT IN YOUR COURSE THROUGH A NEW CURRICULUM INNOVATION USING BLOOMBERG AND THOMSON REUTERS

*Introducing a new curriculum teaching/learning innovation*

Financial analysis must relate not only to what happened in the past based on the data from financial statements, but also to what is going to happen using the information from external sources. While financial statements are easily available, the external sources are more specialized, expensive and require significant time to learn how to effectively use them. Because the time commitment for research, teaching and committees make it difficult for faculty to allocate time for curriculum changes, at American University’s Kogod School of Business, we introduced a new teaching and learning innovation. This innovation incorporates the Financial Services Lab into the curriculum in a way that faculty and students constantly acquire new technology-supported knowledge and skills. The Financial Services Lab enables students to gain exposure to, receive training in, and apply theory to “real life” business situations, all while learning new technology skills.

The director of the Financial Services Lab (who is also a faculty member) works with faculty in understanding course goals and learning objectives. The director is therefore able to assist with designing or updating projects and conducting workshops. The director is the catalyst for instructional innovation. Through workshops, focus groups, and one-on-one training, faculty gain a stronger appreciation of Bloomberg and Thomson Reuters. Hands-on exercises supported by the use of technology encourages faculty to modify their lectures in a way that complements the overall curriculum. The financial technology training sessions motivate faculty to expand instructional opportunities.

The goal of this curriculum innovation is to have a sample-project for each course which can be used across all accounting and finance sections. Each course includes a project that requires students to attend training sessions collecting real data, manipulating that data, using analytics and interpreting the results. The subsequent curriculum is focused both on acquiring the necessary technology skills and promoting collaboration and problem solving, resulting in a new learning experience.

The project can also be used in individual studies and financial seminars, teaching non-financial managers how to read financial statements and to interpret financial results for making better decisions.

*Assigning the Project*

The project that is included in the syllabus should clearly specify:
• learning objectives and detailed requirements of each section
• number of students per group
• completion dates of each section
• grade given for the project as a percentage of total grade

Providing subject-based workshops in the financial services lab

After reading the background material related to the project assigned by the instructor, students come to the Financial Services Lab to develop an action plan, determine the data requirements, design the analysis, collect the data, manipulate the data, perform the analysis and experiments, build the charts and exhibits, interpret the results, write the report and draw a conclusion.

Through a structured way, students are taken through all the steps of the project using a sample company either in one or two training sessions. Because one of the purposes of the project is to make students familiar with the databases and company financial statements, students must work by themselves to locate data on their own for their chosen company and the benchmark company, compare the two companies and write the report following the same methodology. Supplemental questions are provided for instructors to help students reinforce the process.

From the beginning students learn the difference between database reporting and database analytics by which the data reporting enables the conversion of raw data into information while the database analytics facilitates the creation of knowledge. Digging deeper and deeper in Bloomberg and Thomson Reuters, students learn how the application of the findings in the decision making process is the true value of the data (Banasiewicz, 2013).

Ideally, the instructors should not provide the information to the students directly, but they should talk about where the financial information can be located, why is it there, and how does it benefit the analyst. This project transitions students from understanding the theory to applying it, to analyzing the real problem and to evaluating the results.

Encouraging individual group interpretation of the questions

Students are asked to work in groups and to express individually their opinion for all the questions before they formulate their final answer. Most importantly, students should understand the difference between a fact and an opinion, supporting their results by evidence.

The instructor conducting the course maintains a discussion board for the group projects where each student must contribute with questions and answers. Ideally, instructors will schedule a class specifically for project presentations.

Feedback from students has confirmed that the project makes the students apply what they learned in the class, by asking them to justify their decision with supporting data. We can confidently say that at the end of the class, students master financial technologies used by business professionals, entering the labor market with a competitive advantage.
Bloomberg

In 1981, Michael Bloomberg started Innovative Market Systems with three other partners after taking $10 million settlement for his equity in Salomon Brothers (Timms, 2014). In 1983, the company introduced the Bloomberg terminal, a software platform providing access to real-time data for every market, unparalleled news and research, powerful analytics, communications tools and trading capabilities.

Today, more than 320,000 business, finance and government professionals use the terminal for fixed income, equities, foreign exchange, commodities and derivatives data, charting, alerts, and analytics that enable users to put knowledge into action. Up to the minute access to news on companies, economies, governments and politics help change the course of business in real time. The research offerings from more than 1,500 sell-side as well as proprietary sources provide a comprehensive view of the economy, industry, and company level.

Thomson Reuters

While Thomson Reuters was formed in 2008 by the merger of Canada’s Thomson Corp. and British news and information firm Reuters Group, their history goes back to 1934 and 1851 respectively. The I/B/E/S, SDC Platinum, Datastream, Investext, Worldscope, Thomson One, Eikon and others, are the go-to resources for students, faculty, commercial users and researchers alike. In 2011, Thomson Reuters introduced Eikon, the latest product from Thomson Reuters enabling users to retrieve market data, news and economic information pertaining to a wealth of countries and a number of different asset classes including: Foreign Exchange, Money Markets, Fixed Income, Equities, Commodities, Funds, and Real Estate through a complete library of applications and tools. The software is very user friendly and comes with a convenient excel add-in, allowing for the simple extraction of historical and real-time market data.

4. FINANCIAL STATEMENT ANALYSIS PROJECT

Project Summary

The project addresses concepts that students will encounter in a real situation in their careers. Students will be assigned a publicly traded company and a benchmark company. The students are asked to compute ratios and to address a lot of questions, commenting on the information each ratio provides and determining which company is performing better. Students learn how to conduct a financial statement analysis using the tools of ratio analysis.

Audience

The project can be used in a Financial Analysis course, in MBA, MSA and MSF programs. The project serves as well as an extra assignment for honors classes to extend the curriculum beyond that expected of a regular course.
**Learning objectives**

Our objective for this project is to actively engage students in class through a financial statements analysis that students will experience in an internship or job.

The financial statement analysis is used to identify trends in a company’s past performance, to compare a company’s financial results with those of other companies and industry benchmarks.

To conduct a comprehensive analysis, the analysis should be supplemented by an assessment of strengths, weaknesses, threats and opportunities analysis combined with an analysis of the operational strategy. Because the financial data and financial ratios can be manipulated, the analysts should focus on the interpretation of the trends of the ratios and the reasons the trends are occurring, rather than on the ratios themselves.

<table>
<thead>
<tr>
<th>Exhibit 2: Learning Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upon completing this financial statement analysis, the users should know about:</td>
</tr>
<tr>
<td>• the role of ratios in financial statement analysis</td>
</tr>
<tr>
<td>• the ratio categories, their definitions and formulae: profitability, liquidity, asset management and solvency</td>
</tr>
<tr>
<td>• the types of standards that are used for comparing the ratios: historical, industry, forward looking</td>
</tr>
<tr>
<td>• how to calculate and interpret interpretation financial ratios and their drawbacks</td>
</tr>
<tr>
<td>• how to find the data and ratios in Bloomberg and Thomson Reuters databases</td>
</tr>
<tr>
<td>• how to make a strategic assessment, to identify accounting issues and to analyze financial management issues</td>
</tr>
</tbody>
</table>

**Teaching Plan**

1. We begin the class by asking “Who is interested in conducting a financial statement analysis?”

The discussion should bring to surface that the financial statement analysis is performed by company managers when drafting the management’s discussion and analysis section of the annual report; by the analysts from investment banks when developing a stock research report; by commercial bankers when deciding to make a loan to a customer; by a private equity investor when analyzing the opportunity of investing in a company’s stock; by employees when comparing the current financial status of the employer with previous periods; and by the auditors when conducting a financial statement audit.

2. We briefly talk about the history of Bloomberg and Thomson Reuters and the benefits and challenges emphasizing that they are both widely used by finance professionals and that their use and functions enhance student success in their career choices.

3. In class, we walk through a step-by-step analysis of each section using both systems and commenting on the interpretation of the ratios.

In this paper, we provide several examples of data and analysis tools from Thomson Reuters and
Bloomberg. Faculty have access to the Bloomberg and Thomson Reuters screenshots along with the appropriate step-by-step instructions how to get to the data and analytics. A set of relevant questions are included to lead to or to enforce the computed ratios, helping students better understand the concepts.

**Bloomberg Basic Info**

Bloomberg is a command-driven system. You must type commands into the system to begin your search for information. The Bloomberg keyboard has a couple of types of keys. **Green keys** are action keys that allow you to proceed. For instance, the <GO> or enter key is typed after any command. The **red keys**, like escape for instance, allow you to stop the current command (<CANCEL>) and to log out of the system (<CONN DEUALT>). **Yellow keys** are market sector keys. For instance, when looking up a bond, you would use the <CORP> key. The final set of keys are the regular keys on the keyboard.

**Exhibit 3: Bloomberg Keyboard**

*Source: Bloomberg*

**Background Information**

We start with the Bloomberg system. Each student will set up Bloomberg account (instructions in Appendix B). Once we are in the Bloomberg system, we want to find basic and descriptive overview of the chosen company, in this case Wal-Mart.

**Exhibit 4: Bloomberg: Company Background**

Type WMT EQUITY <GO>. Then type DES <GO>.

*Source: Bloomberg*
Selecting “Description” will allow you to view reports, an overview of the company, and basic information along with a description. In this category, you can see a business description, issue information, management team, top holders, latest ratios, comparable revenue and EPS, business and geographic segmentation as well as relevant industry information.

Now, we’ll use Thomson Reuters Eikon to find our chosen company.

Exhibit 5: Thomson Reuters Eikon: Background Information
Enter company name in the box on the top left and navigate to „Overview”.

Source: Thomson Reuters

Business Segments
Select “Overview” and scroll down to “Business Info”

Source: Thomson Reuters

Officers
In the tool bar select “ESG” and then click on „Officers” to get the information you look for.
Before we start our analysis for comparison and consistency, we talk about all industry classifications and the importance of choosing an industry and sticking to it for the entire analysis. It is useful to present the differences between industry classifications in both systems, Bloomberg and Thomson Reuters. Eikon provides a couple identifiers such as: the Global Industry Classification Standard (GICS), Thomson Reuters Benchmark (TRBC), NAICS.

*Type the name of the company, choose “Overview” and then “Codes and Schemes”*
Major Developments
Go to “Events” then “Transactions” and choose “Company Deals”

Annual Report, Management Discussion and Analysis
This information is obtained from the Proxy statement, Information statements or the Annual Report
Go to “Fillings”, under “Category” type 10-K and click “Search”. From there choose the annual report. Item 7 of the annual report provides an overview of the previous year’s operations and how the company performed financially.
Source: Thomson Reuters

Financial Statements

The 3 financial statements, Income Statement, Balance Sheet and Cash Flow Statement, can be found under the “Financials”. In the right-hand corner click on the Excel icon and the financial statements are exported to Excel.
Before we start a ratio analysis, we need to understand the company’s customers, competitive forces, critical success factors and accounting issues. The Notes to the financial statements should be read by identifying any accounting issues related to the estimation of bad debts if the accounts receivables are a large number or changes in inventory method from FICO to LIFO etc. The notes to the financial statements describe the principles, estimates, and assumptions used by organizations to account for their assets and liabilities.

Common size financial statements help analysts examine the trends in a company over time and compare the company to other companies. Common size financial statements are useful for companies of different size displaying all line items as percentages of a common base line item figure. Students should compare the component percentages from common-size financial statements to the component percentages of benchmark company or industry averages at the same point in time.

The specific questions we might want to ask are the following:

- What do the common-size financial statements tell us about the company?
- What percentage of the company revenues does the company have left over after paying all the expenses including taxes?
- Describe the relative importance of major expense categories, including COGS, operating expenses and interest expenses?
- What percentage of company assets did the company finance with short term debt? How about with long term debt?

Differences between companies should be viewed as indicators that further analysis is necessary, not as an indication that problems exist. Once the differences are discovered, the causes of
significant differences should be further explored in detail because different causes might have different impacts on the company’s financial performance.


<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
<tr>
<td><strong>Cost of Revenue, Total</strong></td>
<td>74.35%</td>
<td>74.87%</td>
<td>75.17%</td>
<td>75.18%</td>
<td>75.17%</td>
</tr>
<tr>
<td><strong>Gross Profit</strong></td>
<td>25.65%</td>
<td>25.13%</td>
<td>24.83%</td>
<td>24.82%</td>
<td>24.83%</td>
</tr>
<tr>
<td><strong>Selling/General/Admin. Expenses, Total</strong></td>
<td>20.96%</td>
<td>20.13%</td>
<td>19.24%</td>
<td>19.18%</td>
<td>18.91%</td>
</tr>
<tr>
<td><strong>Research &amp; Development</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Depreciation/Amortization</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Interest Expense, Net - Operating</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Interest/Investment Income - Operating</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Interest Expense(Income) - Net Operating</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Interest Exp.(Inc.),Net Operating, Total</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Unusual Expense (Income)</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Other Operating Expenses, Total</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total Operating Expense</strong></td>
<td>95.31%</td>
<td>95.00%</td>
<td>94.41%</td>
<td>94.36%</td>
<td>94.08%</td>
</tr>
<tr>
<td><strong>Operating Income</strong></td>
<td>4.69%</td>
<td>5.00%</td>
<td>5.59%</td>
<td>5.64%</td>
<td>5.92%</td>
</tr>
<tr>
<td><strong>Interest Expense, Net Non-Operating</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
In order to identify and assess trends in a company's financial position and performance, we use ratio analysis. Evaluating those trends help us isolate historical patterns, gauge their significance over time, and assess their effects on the company's future.

**Profitability Ratios**

Profitability focuses on an organization's ability to generate revenues and to control expenses to provide returns for owners and others. Profitability ratios are key indicators of a company's economic performance. In the long run, the company must generate enough cash to replace the fixed assets, to purchase new assets, to pay off the debt, to reinvestment back for growth, and to reward the shareholders. The specific questions we should ask are:

- How does the company generate a profit?
- What is the quality of company’s earnings?
- How large is the net income relative to sales?

Instructors can elaborate on the interpretation of profitability ratios listed below and through other examples such as how big investments in research and development affect the profitability.
Liquidity Ratios

Liquidity refers to the degree to which a company is able to meet its current financial obligations when due, and its ability to take advantage of operational, investment and financial opportunities that might arise in the future. It is affected by the types of goods and services that it sells, the experience of its managers, its overall financial structure, and the health of its industry. Analyzing the liquidity requires an understanding of the current and projected financial situation, and the company’s operating cycle. Students should use the Management Discussion and Analysis disclosures to understand fully the company's liquidity position; to distinguish recurring from nonrecurring sources and uses of cash flows -- such as prepayments of large inventory purchases, unusual contributions to pension plans, and higher than normal income tax payments or refunds; and to identify trends in an organization's liquidity over time.

Some of the questions we should ask are:

- How is the company using its cash? Is the company generating cash from its operations?
- Is it enough cash to meet its current obligations?
- How does the company manage its accounts receivable? How fast does it collect them?
- Does the company manage its inventory well? Are there any accounts proven uncollectable or inventories not able to be sold?
- Given its business risk, are the cash flows certain from year to year?
To capture any window-dressing methods used, we must investigate any use of off-balance-sheet financing mechanisms that understate recorded current liabilities, and any unexplained end-of-period current asset write-offs or write-downs. Qualitative factors that also affect liquidity should be analyzed given the degree of financial flexibility that a company has to counter potential disruptions in its cash flows or to deal with unexpected financial problems or to take advantage of unintended opportunities.

Exhibit 8: Thomson Reuters Eikon: Liquidity Ratios

Go to “Financials”, scroll down to “Key Ratios”

### Asset Utilization and Activity Analysis

Activity analysis provides important information about the efficiency by which a company utilizes its assets to generate profits and determine the needs for working capital and long term financing. Because these ratios are based on figures from the balance sheet, users should adjust them using current market values and incorporating the research and development projects.

The following examples illustrate the types of questions that asset utilization and activity analyses are designed to address.

- What does the demand of the products and services tell us about the sales, cash flows and profits?
- How do customers pay for the products?
- Are the accounts receivable collected efficiently?
- Are the asset utilization ratios improving or worsening? Why?
Tracking the trends in asset utilization ratios listed below and comparing them to the benchmark company can reveal weaknesses and strengths of the company as well as some problems related to liquidity.

**Exhibit 9: Asset Utilization and Activity Analysis Ratios**

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Formula</th>
<th>2016</th>
<th>2015</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inventory turnover</strong></td>
<td>Cost of goods sold ÷ Average inventory</td>
<td>WMT</td>
<td>Benchmark Competitor Industry Average</td>
<td></td>
</tr>
<tr>
<td><strong>Average number of days inventory in stock</strong></td>
<td>365 ÷ Inventory turnover</td>
<td>WMT</td>
<td>Benchmark Competitor Industry Average</td>
<td></td>
</tr>
<tr>
<td><strong>Accounts receivable turnover</strong></td>
<td>Net sales ÷ Average trade receivables</td>
<td>WMT</td>
<td>Benchmark Competitor Industry Average</td>
<td></td>
</tr>
<tr>
<td><strong>Average number of days accounts receivable outstanding</strong></td>
<td>365 ÷ Accounts payable turnover</td>
<td>WMT</td>
<td>Benchmark Competitor Industry Average</td>
<td></td>
</tr>
<tr>
<td><strong>Accounts payable turnover</strong></td>
<td>Inventory purchases ÷ Average accounts payable</td>
<td>WMT</td>
<td>Benchmark Competitor Industry Average</td>
<td></td>
</tr>
<tr>
<td><strong>Average number of days accounts payable outstanding</strong></td>
<td>365 ÷ Accounts payable turnover</td>
<td>WMT</td>
<td>Benchmark Competitor Industry Average</td>
<td></td>
</tr>
<tr>
<td><strong>Cash operating cycle</strong></td>
<td>Average days inventory outstanding + Average days accounts receivable outstanding – Average days accounts payable outstanding</td>
<td>WMT</td>
<td>Benchmark Competitor Industry Average</td>
<td></td>
</tr>
<tr>
<td><strong>Fixed assets turnover</strong></td>
<td>Net revenues ÷ Average total fixed assets</td>
<td>WMT</td>
<td>Benchmark Competitor Industry Average</td>
<td></td>
</tr>
<tr>
<td><strong>Total assets turnover</strong></td>
<td>Net revenues ÷ Average total assets</td>
<td>WMT</td>
<td>Benchmark Competitor Industry Average</td>
<td></td>
</tr>
</tbody>
</table>

*Cash Operating Cycle*

The Cash Operating Cycle shows the efficiency and effectiveness of a company's inventory systems and controls, ongoing credit and collections efforts, and accounts payable management. Basically, it shows how long it takes for an organization to acquire and pay for inventory, sell the inventory, and receive payments from customers for those sales.
Solvency Analysis

The income statement and the right side of the balance sheet tells us if the company has made good financing decisions. Creditors and managers typically are concerned with the ability of debtor organizations to make principal and interest payments. They use quantitative techniques to assess the company’s liquidity, cash flow, and solvency and to answer questions such as:

- What kind of debt does the company have?
- What are the sources of cash to be used to repay its obligations?
- How much flexibility does the organization have to meet its obligations in the event of unforeseen difficulties?
- How much long term debt does the company have? Does the company operate at the optimal Debt/Equity ratio?

Faculty can lead a discussion on why the company’s debt and solvency ratios differ significantly from competitors' and industry average ratios, and assess the implications of those differences for future periods.

Excel Integration

Because Excel skills are constantly ranked high with employers, here we will download the data in Excel from the Bloomberg library. This gives students a chance to learn how to change the template using different formulae with a variety of fields.
It will take you to the Company In-Depth Fundamentals template. Open the Excel template.

On the Key Stats tab, in the Ticker Cell: enter WMT US then press <Enter>. The entire workbook will update our company’s Financial Statements, Multiples, Ratios, Capital Structure. Repeat the same steps for the benchmark competitor.

Source: Bloomberg

To find the debt ratings of the company, in the Bloomberg terminal type CRPR <GO>
Now that we have our own Excel model for company fundamentals, we need not forget the maxim that “our proprietary model is only as good as the data that drives it”. Therefore, we teach our students how to use the Bloomberg’s Application Program Interface (API), so we can feed Bloomberg data into our applications via Microsoft Excel. Then in our Excel model, we can customize the data to fit our individual needs.

For example, the Bloomberg Data History (BDH) functions returns the historical data for a selected security and timeframe (Exhibit 12). If we want to retrieve the ROIC historical yearly data for our chosen company listed horizontally, we would use the following syntax:

\[ \text{BDH("Ticker","RETURN\_ON\_INV\_CAPITAL","Start Date","","per=y","dir=h")} \]

Exhibit 12: Bloomberg Excel API Formula

Cash Flow Analysis

Cash Flow Analysis is the evaluation of a company’s cash inflows and outflows from operations, investing and financing activities. Here, we talk about how the statement of cash flows is
constructed, what can be derived from reading and analyzing it, and what it tells us about the way a company manages its liquidity and cash needs.

After a careful examination of financial statements and related ratios, other questions should be raised when the analysts identify distortions between the types and amounts of assets reported on balance sheet and related financial notes and the economic resources that are not reported. Some of these situations appear with the leased assets, with advertising and research and development

### Exhibit 13: Cash Flow Statement

**Bloomberg: Type WMT EQUITY <GO> Then FA <GO>**

<table>
<thead>
<tr>
<th>Months Ending</th>
<th>FY 2013</th>
<th>FY 2014</th>
<th>FY 2015</th>
<th>FY 2016</th>
<th>FY 2017</th>
<th>Last 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Change in Operating Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ Net Income</td>
<td>16,999.0</td>
<td>16,022.0</td>
<td>16,363.0</td>
<td>14,694.0</td>
<td>13,643.0</td>
<td>12,729.0</td>
</tr>
<tr>
<td>+ Depreciation &amp; Amortization</td>
<td>8,501.0</td>
<td>8,870.0</td>
<td>9,173.0</td>
<td>9,454.0</td>
<td>10,080.0</td>
<td>10,344.0</td>
</tr>
<tr>
<td>+ Non-Cash Items</td>
<td>1,151.0</td>
<td>1,322.0</td>
<td>1,018.0</td>
<td>1,124.0</td>
<td>1,617.0</td>
<td>2,576.0</td>
</tr>
<tr>
<td>+ Deferred Income Taxes</td>
<td>-133.0</td>
<td>-279.0</td>
<td>-503.0</td>
<td>-672.0</td>
<td>761.0</td>
<td>922.0</td>
</tr>
<tr>
<td>+ Other Non-Cash Adj</td>
<td>1,284.0</td>
<td>1,611.0</td>
<td>1,521.0</td>
<td>1,796.0</td>
<td>856.0</td>
<td>2,054.0</td>
</tr>
<tr>
<td>+ Charged in Non-Cash Work Cap</td>
<td>-1,060.0</td>
<td>-2,823.0</td>
<td>2,995.0</td>
<td>2,117.0</td>
<td>6,190.0</td>
<td>2,010.0</td>
</tr>
<tr>
<td>+ (Inc) Dec in Accs Receiv</td>
<td>-614.0</td>
<td>-566.0</td>
<td>-569.0</td>
<td>-19.0</td>
<td>402.0</td>
<td>-266.0</td>
</tr>
<tr>
<td>+ (Inc) Dec in Inventories</td>
<td>-2,759.0</td>
<td>-1,667.0</td>
<td>-1,229.0</td>
<td>-703.0</td>
<td>1,021.0</td>
<td>199.0</td>
</tr>
<tr>
<td>+ Inc (Dec) in Accs Payable</td>
<td>1,061.0</td>
<td>531.0</td>
<td>2,678.0</td>
<td>2,008.0</td>
<td>3,942.0</td>
<td>2,613.0</td>
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<tr>
<td>+ Inc (Dec) in Other</td>
<td>1,252.0</td>
<td>-1,121.0</td>
<td>1,142.0</td>
<td>831.0</td>
<td>1,629.0</td>
<td>-542.0</td>
</tr>
<tr>
<td>Net Cash From Op</td>
<td>-148.0</td>
<td>-295.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash from Operating Activities</td>
<td>25,591.0</td>
<td>23,257.0</td>
<td>28,564.0</td>
<td>27,389.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Months Ending</th>
<th>FY 2013</th>
<th>FY 2014</th>
<th>FY 2015</th>
<th>FY 2016</th>
<th>FY 2017</th>
<th>Last 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Change in Investing Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ Change in Fixed &amp; Intang</td>
<td>-12,366.0</td>
<td>-12,388.0</td>
<td>-11,604.0</td>
<td>-10,842.0</td>
<td>-10,163.0</td>
<td>-10,015.0</td>
</tr>
<tr>
<td>+ Disp in Fixed &amp; Intang</td>
<td>532.0</td>
<td>723.0</td>
<td>570.0</td>
<td>635.0</td>
<td>456.0</td>
<td>456.0</td>
</tr>
<tr>
<td>+ Disp of Fixed Prod Assets</td>
<td>532.0</td>
<td>723.0</td>
<td>570.0</td>
<td>635.0</td>
<td>456.0</td>
<td>456.0</td>
</tr>
<tr>
<td>+ Disp of Intangible Assets</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>+ Acq of Fixed Intang</td>
<td>-12,898.0</td>
<td>-13,115.0</td>
<td>-12,174.0</td>
<td>-11,477.0</td>
<td>-10,619.0</td>
<td></td>
</tr>
<tr>
<td>+ Acq of Fixed Prod Assets</td>
<td>-12,898.0</td>
<td>-13,115.0</td>
<td>-12,174.0</td>
<td>-11,477.0</td>
<td>-10,619.0</td>
<td></td>
</tr>
<tr>
<td>+ Acq of Intangible Assets</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>+ Net Change in LT Investment</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>- Dec in LT Investment</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>- Inc in LT Investment</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Net Cash From Acq &amp; Div</td>
<td>-316.0</td>
<td>0.0</td>
<td>671.0</td>
<td>246.0</td>
<td>1,801.0</td>
<td>-1,152.0</td>
</tr>
<tr>
<td>+ Cash from Divestitures</td>
<td>0.0</td>
<td>0.0</td>
<td>671.0</td>
<td>246.0</td>
<td>662.0</td>
<td>1,674.0</td>
</tr>
<tr>
<td>+ Cash for Acq of Subs</td>
<td>-316.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>-2,463.0</td>
<td>-2,826.0</td>
</tr>
<tr>
<td>+ Cash for JVs</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Net Cash From Disc Ops</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Cash from Investing Activities</td>
<td>-12,611.0</td>
<td>-12,526.0</td>
<td>-11,125.0</td>
<td>-10,675.0</td>
<td>-13,987.0</td>
<td>-13,130.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Months Ending</th>
<th>FY 2013</th>
<th>FY 2014</th>
<th>FY 2015</th>
<th>FY 2016</th>
<th>FY 2017</th>
<th>Last 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Change in Financing Activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ Dividends Paid</td>
<td>-5,361.0</td>
<td>-6,139.0</td>
<td>-6,185.0</td>
<td>-6,294.0</td>
<td>-6,216.0</td>
<td>-6,171.0</td>
</tr>
<tr>
<td>+ Cash From (Repayment) Debt</td>
<td>1,487.0</td>
<td>3,015.0</td>
<td>-5,018.0</td>
<td>-3,158.0</td>
<td>-3,591.0</td>
<td>-3,688.0</td>
</tr>
<tr>
<td>+ Cash From (Repay) ST Debt</td>
<td>2,754.0</td>
<td>911.0</td>
<td>-6,288.0</td>
<td>1,235.0</td>
<td>-1,673.0</td>
<td>1,328.0</td>
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<tr>
<td>+ Cash From LT Debt</td>
<td>211.0</td>
<td>7,072.0</td>
<td>5,174.0</td>
<td>39.0</td>
<td>133.0</td>
<td>1,531.0</td>
</tr>
<tr>
<td>+ Repayments of LT Debt</td>
<td>1,476.0</td>
<td>-4,966.0</td>
<td>-3,904.0</td>
<td>-4,432.0</td>
<td>-2,955.0</td>
<td>-4,206.0</td>
</tr>
<tr>
<td>+ Cash (Repurchase) of Equity</td>
<td>-7,600.0</td>
<td>-6,683.0</td>
<td>-1,015.0</td>
<td>-4,112.0</td>
<td>-8,298.0</td>
<td>-7,893.0</td>
</tr>
<tr>
<td>+ Increase in Capital Stock</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>+ Decrease in Capital Stock</td>
<td>-7,600.0</td>
<td>-6,683.0</td>
<td>-1,015.0</td>
<td>-4,112.0</td>
<td>-8,298.0</td>
<td>-7,893.0</td>
</tr>
<tr>
<td>+ Other Financing Activities</td>
<td>498.0</td>
<td>-982.0</td>
<td>-2,853.0</td>
<td>-2,558.0</td>
<td>624.0</td>
<td>-914.0</td>
</tr>
<tr>
<td>+ Net Cash From Disc Ops</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Cash from Financing Activities</td>
<td>-11,922.0</td>
<td>-10,789.0</td>
<td>-15,071.0</td>
<td>-16,122.0</td>
<td>-18,929.0</td>
<td>-16,346.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Months Ending</th>
<th>FY 2013</th>
<th>FY 2014</th>
<th>FY 2015</th>
<th>FY 2016</th>
<th>FY 2017</th>
<th>Last 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect of Foreign Exchange Rates</td>
<td>223.0</td>
<td>-442.0</td>
<td>-514.0</td>
<td>-1,022.0</td>
<td>-452.0</td>
<td>310.0</td>
</tr>
<tr>
<td>Net Changes in Cash</td>
<td>1,231.0</td>
<td>-500.0</td>
<td>1,854.0</td>
<td>-430.0</td>
<td>-1,838.0</td>
<td>-1,207.0</td>
</tr>
<tr>
<td>Cash Paid for Taxes</td>
<td>7,304.0</td>
<td>8,641.0</td>
<td>8,169.0</td>
<td>8,111.0</td>
<td>4,507.0</td>
<td>5,935.0</td>
</tr>
<tr>
<td>Cash Paid for Interest</td>
<td>2,262.0</td>
<td>2,362.0</td>
<td>2,433.0</td>
<td>2,540.0</td>
<td>2,351.0</td>
<td>2,351.0</td>
</tr>
</tbody>
</table>

**Source: Bloomberg**
expenditures, and when estimating the appropriate end-of-period balance for the allowance for bad debts and estimating fair values of land, buildings, equipment, and intangibles.

Students should be guided to think about questions related to a qualitative analysis, such as:
- Are the financial statements prepared in accordance with accounting standards applied on a consistent basis?
- Are there any hints that the company might have managed company’s earnings to present a more favorable picture?

**Earnings Quality**

In practice, earnings quality has different meanings. For some researchers the term captures the extent to which reported earnings reflects the economic impacts of transactions and other events that have occurred during a period (Dechow, 1994). Others focus on the notion that higher quality earnings arise from transactions in the U.S. and other locations with more predictable economies, and from regulated businesses and other sectors shielded from too much competition by barriers to entry. Others emphasize earnings’ sustainability and persistence in the long run.

Thomson Reuters has developed a rating system which uses its StarMine Earnings Quality model to identify public companies sustainable and unsustainable earnings sources and to provide a score that is useful in comparing the quality of those companies' reported earnings. The StarMine uses computer-driven models to analyze financial statements and to calculate rankings for more than 35,000 companies worldwide. The scores have proven to be reliable predictors of a company’s ability to sustain high earnings over the coming quarters.

---

**Exhibit 14: Earning Quality: Thomson Reuters**

*Type the name of the company in the application Search box then go to “Financials” and scroll down to “Earning Quality”*
Before we start comparing the performance of the two companies, we explain how analysts can adjust the reported numbers. Further, before we talk about the relative valuation methodology using multiples, we discuss how analysts can assign higher multiples to higher quality earnings due to earnings’ higher level of sustainability and predictability.

**Analyst Reports**

Analyst reports help us supplement traditional financial-statement-focused ratio analyses with the perspectives of the capital markets. Their research reports can be useful for investors to discover subtle red flags that might not be apparent from reading the financial filings. Red flags might include changes to financial reporting, governance issues, off-balance sheet items etc. The analyst reports help students, faculty, and investors with modeling management guidance, outlining an investment narrative, identifying significant issues, and understanding independent analysts’ earnings forecasts providing buy/sell recommendations. After going through a couple of research reports, we ask students to write a concise justification between the discrepancies among management, independent analysts and their own assessment.

To identify the analysts covering the stock we can use Thomson Reuters or Bloomberg. Students learn how to find the analysts and how the Star Mine rating system helps them identify the top analysts.

**Exhibit 15: Thomson Reuters Eikon: Top Analysts**

*Type the “Name of the company”, then go to “Financials” and scroll down to “Top Analysts”*
Exhibit 16: Bloomberg: How to Find Analysts Recommendations and Reports
Type ANR <GO> and BRC <GO>
Analysts evaluate how “expensive” a company’s common stock is by analyzing changes in the company’s P/E ratios over time and by comparing a company’s P/E ratios with those of the benchmark company, industry or market benchmarks such as S&P 500.

We focus the discussion on the differences between different P/E ratios such as earnings volatility, forecasted earnings, growth potential and financial risk. Because it is easy to affirm that the stock is expensive or undervalued, we found it helpful if we channel students towards the relationship between a high P/E ratio and the company’s prospects for growth, higher dividends.

**ROE Framework**

Equity investors, analysts and others are interested in the return on equity ratio if they wish to derive the overall performance of common stock investments. The ROE measures how the company has used shareholders’ capital during a fiscal period to produce income. A discussion of the differences between using the book values versus the market value of equity is necessary before we start the DuPont Analysis. We also highlight the distinction that the ROE is not an indicator of short-term cash returns. The investors’ return to equity will depend on the size of the company’s cash dividend payments and the price when the investment is sold.

We provide with the DuPont formula data for the chosen company and the benchmark company and we ask the students to discuss the performance of the two companies.

**Exhibit 17: Thomson Reuters Eikon: DuPont Data**

*Type the “Name of the company”, then go to “Financials” and scroll down to “Ratios”.*
Here we should attempt to answer the following sorts of questions:

- Which are the levers available to managers to improve the performance of the company?
- What is the tradeoff between the profit margin and asset turnover between the two companies when analyzing the ROE?
- What do the differences between the profit margins and asset turnover tell in terms of companies’ strategies?
- Which are the limitations of the DuPont Analysis?

One important point that emerges from the discussion is the difference between the accounting ROE and the stock price performance of the two companies. If time permits, faculty can introduce the modified DuPont analysis separating out operating performance from the effect of leverage.

5. CONCLUSION

Our intention was not to emphasize the need to acquire technology skills, but to show how to learn using the technologies within the accounting and finance field.

We demonstrated theory with live market data integrated in a comprehensive financial statements project. We can confidently say that Thomson Reuters and Bloomberg allow users to customize their analyses to their needs. They incorporate the news, data, analytics and messaging for a more complete solution to any problem. As the market and new tools evolve, there will be an increased need for more specialists who will have to know how to integrate the new technologies turning the raw data into decision-useful information.

The project taught in the financial services lab also helps business schools comply with the AACSB Standard A7 requiring that curricula “include learning experiences that develop skills and knowledge related to data creating, data sharing, data analytics, data reporting” taking place not only in one course, but across the curriculum.

Because financial technologies change so fast, business professionals must recognize that these technology skills are a necessity in the competitive labor market. Therefore, professionals should keep an eye on technology trends to understand how they can be deployed within a company to gain a competitive advantage. These skills will complement the business knowledge and will make professionals more marketable.

REFERENCES

Association to Advance Collegiate Schools of Business, Eligibility Procedures and Accreditation Standards for Business Accreditation, (AACSB International, July 1, 2017


APPENDIX A

Financial Statement Analysis Project

This project makes extensive use of financial information and as such databases/tools available in the Kogod financial services laboratory (FSIT lab) are very relevant to the successful completion of the project. The professor teaching the course will work with the Director of the Financial Services Lab who will serve as a technical consultant to the project. The director will be conducting two tutorials during the semester to introduce and demonstrate the use of databases and tools (e.g., Bloomberg, Thomson Reuters) available in the lab. While the first tutorial will provide a broad introduction to the resources of the FSIT lab, the second and the third tutorials will be targeted more to the class project. The attendance is compulsory. [Note, the resources of the lab are extensively used in several Kogod classes and the data skills you acquire are highly marketable].

Instructions:
You will be placed in a group of four students. Each group will be assigned a publicly traded company and a benchmark company. This is a project designed for a 15 week class. You will need to access a copy of the 2017 annual report for your company and its benchmark. This project is divided into two interrelated parts. Part I is due after the 6th class and Part II after the 13th class. Instructions for the two parts will be provided separately. In both parts, you will be asked to compute ratios. Since ratio interpretation relies heavily on a context (time, industry benchmarks), whenever you are presenting ratios, you need to provide ratios for two years for your company, benchmark company, and industry averages side by side. Because definitions for ratios can vary, please use definitions provided in the ratios handout for consistency. Additionally, some ratios require calculation of averages for some accounts, this may require you to access certain financial information from the previous annual reports for your company and its selected peer.
The project reports should be highly professional and must **be presented in a form that would be suitable for submission to a client.** In addition, the report should be concisely written and the complete report should be no longer than 20 pages [including exhibits]. The financial statements [income statement, balance sheet, and statement of cash flows] should be appended to the report. Student can consult with the Center for Business Communication to get advice on best practices on report preparation. I will maintain a discussion board for the group projects on the blackboard site. All questions and comments regarding the group projects should be posted on the discussion board. I encourage everybody to participate actively in the discussion board. Although, I encourage open discussion and consultation on the group project via the blackboard site, the project reports submitted by each group must be their own work.

Financial Statement Analysis Project

<table>
<thead>
<tr>
<th>Part 1 Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Due Date: After the 6th class</strong></td>
</tr>
</tbody>
</table>

**Background Information: [2-3 pages maximum]**

1. Brief Overview of the Company
   - Main lines of business; Major products or services; Major markets; Leadership team
     [Also refer to major geographical/industrial segments presented by the company in their annual report]

2. Industry Analysis
   - Company Standard Industry Code (SIC); Brief Overview of Industry; Major Competitors; Industry Dynamics/Developments/Outlook

3. Major Developments
   - Mergers & Acquisitions; Regulations; Other significant events

4. Auditors & auditing report
   - Name of auditors; Nature of audit report; any qualifications; comments; Division of responsibilities between the auditor and management

5. Management report and management discussion and analysis
   - Brief summary of the information in these two reports

**Financial Analysis: [5-6 pages maximum]**

1. Comparative common size income statements and balance sheet of the company for the last two years with latest year statement benchmarked against specified competitor.

2. Profitability Analysis:
   - Prepare a schedule that presents the following ratios: Gross profit margin; Net profit margin; Return on assets; Return on equity
   - Also compare the income statement format/presentation for your company vs. the benchmark focusing especially on the difference between core and non-core activities.
Comment in your report on the information each one of the ratios provides. Based on the above results and analysis, develop an assessment of profitability for your company.

3. Liquidity Analysis:
   - Prepare a schedule that presents the following ratios: current ratio; quick ratio; operating cash flow to current debt ratio.
   - Also compare the cash flow generating patterns for your company vs. the benchmark focusing specially on the amount of cash being generated by operations.
   - Comment in your report on the information each one of the ratios provides. Based on the above results, develop an assessment of liquidity for your company.

4. Activity/Efficiency Analysis:
   - Prepare a schedule that presents the following ratios: accounts receivables turnover, days in accounts receivables; inventory turnover, days in inventory, accounts payables turnover, days in accounts payables; fixed asset turnover.
   - Identify and compare the revenue recognition methods, inventory policies, and depreciation policies for your company and that of the benchmark. Also develop an assessment of the accounting for allowance for uncollectible accounts for your company relative to the benchmark company. Do you observe the same patterns in the allowance account; is the provisioning adequate; is it increasing or decreasing?
   - Comment in your report on the information each one of the ratios provides. Based on the above results and comparative analysis of accounting policies, develop an assessment of activity/efficiency for your company.
   - Combine the days in accounts receivables, accounts payables, and inventory to calculate the cash gap for the company and compare it with the benchmark company. What does the cash gap indicate? Briefly comment.

Stretch Question: [Half page maximum]
   - Access the 2017 annual report for Citicorp. Examine its income statement, balance sheet, and statement of cash flows. Why do the financial statements of Citicorp look so different than those for your company? Explain briefly

Part II Requirements
Due Date: After the 13th class

Deliverable: You will provide an integrated report that incorporates updated work for Part 1 as well as work required for Part II.

Financial Analysis: [3-4 pages maximum]

1. Solvency Analysis:
   - Prepare a schedule that presents the following ratios: Long term debt to total assets; debt to equity; times interest earned; operating cash flow coverage
   - Examine the footnote related to leases for your company. What proportion of total leases are accounted as operating leases for your company and how does this compare
to the benchmark company. What adjustments would you make as an analyst to adjust for these differences? Briefly state your reasoning.

- Obtain the debt ratings of the company and compare it to the benchmark.
- Does your company have any contingent liabilities? Briefly describe and comment on whether they are significant to influence your evaluation of the company.
- Is there any evidence of other significant off balance sheet financing arrangements? Comment briefly.
- Comment in your report on the information that each ratio provides. Based on the results and additional evaluation above, develop an assessment of the solvency position for the company.

2. Cash Flow Analysis

- Prepare a schedule that presents the cash flow from operating, investing, and financing activities for your company and its peer for the last two years.
- Examine the pattern (increases/decreases) in these cash flows. Are the operating cash flows sufficient to pay principal and interest on debt and meet other cash requirements?
- Develop a brief summary of your assessment of your company’s sources and uses of cash and how it compares to that of its peer.

3. Value Analysis:

- Prepare a schedule that presents the following ratios: Book value of common stock; dividend payout; market to book; price earnings ratio
- Comment in your report on the information that each ratio provides. Based on the results, why is there a gap between book and market values for your company?

Other Assessments: [1 page maximum]

1. Earnings Quality & Earnings Persistence.

- Based on an evaluation of accounting policies and accounting method choices conducted in earlier sections on areas such as: revenue recognition; accounting for allowance for uncollectibles; inventory method choices; depreciation method choices and estimates; lease accounting; off balance sheet financing develop an overall evaluation of earnings quality for the firm. Is the company’s accounting posture, conservative, neutral, or aggressive? Briefly discuss.
- Based on an examination of the income statement, comment on the segregation of core vs. non core activities and any nonrecurring items such as discontinued operations, extraordinary items or effect of accounting changes.
- How do these impact earnings persistence?

Outside Assessments: [1 page maximum]

- Identify the analysts and their affiliations who follow your company.
- Obtain the most recent analysts reports and examine them
- Prepare a schedule that documents management’s forecasts and analysts’ earnings forecasts for the coming year. Briefly explain why you should not
place complete reliance on management’s and analysts’ forecasts.
- Concisely summarize the above information, state whether you agree, partly agree, or disagree with this outside assessment. In other words, is this information consistent, partly consistent, or inconsistent with your analysis. {Note: I don’t want reports that parrot or closely resemble analysts’ reports for the company. Analysts’ reports are to be consulted only as a reference at the end of the project]

Concluding Section - Integrative Framework - ROE Framework [2-3 pages maximum]
- Integrate the various ratio analyses for the most current year for your company and its benchmark [Refer to p. 190 of textbook for ROE framework]
- Use the ROE model to provide an integrative analysis for your company that leverages all the information, both financial and non-financial, that you have collected to provide a final assessment.

APPENDIX B

**Bloomberg: Creating a new login**

To get started, go to a computer with a Bloomberg software configured and licensed.

1. Run the Bloomberg software by double-clicking on the Windows desktop icon for Bloomberg.
2. Once the Bloomberg software launches, press the red Default key (DFLT) on the Bloomberg keyboard or press the GO key (Enter) to display the login prompt.
3. Click on the prompt to Create a New Login
Select your preferred language and then click the Continue button as shown below.

5. Fill in the requested information such as your name, phone number(s) and e-mail address. You should provide your e-mail address for the school you attend. Click the Continue button when done.

6. Once the contact information is filled out, Bloomberg will generate a validation code that you will need to type into the Bloomberg terminal. This code can be sent via SMS message (text message). Click the Send Code button.

7. Once the SMS message is received on your phone, type in the validation code in the space provided on the next screen. Then click on the Create Login button.
8. Once your new login is created, click on the link to return to the main Login screen to log in with your user ID and password.

Source: Bloomberg