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

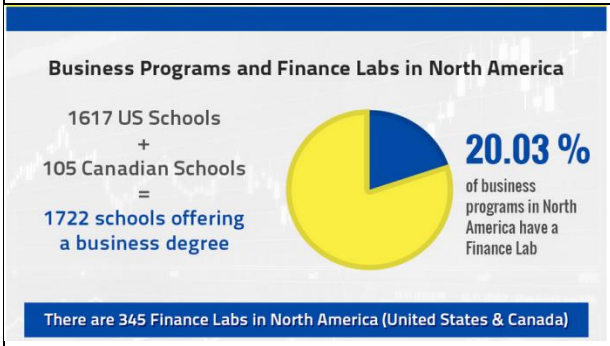
In a fast paced society, university professors, university administrators and employers must constantly engage in a healthy debate about what skills employers most need from business school graduates. Students should learn a variety of skills that insure their employability. Wagner (2008) interviewed 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".

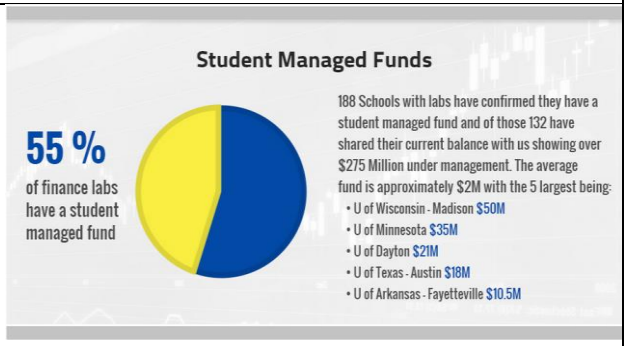
For learning to take place, other researchers showed that critical thinking needs to be done in a real world setting whenever possible, posing and solving problems that are authentic in nature (Lipman, 1988; McPeck, 1990). In 2012, Forbes Magazine reported that the number one job skill employers are 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.

Exhibit 1





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).

Thomas Coe (2007) identifies potential applications using Bloomberg and potential benefits acquiring it. Scott (2010) discusses how to implement the Bloomberg certification into finance classes. Lei and Li (2012) show how to use the Bloomberg terminal for teaching a securities analysis and portfolio management class.

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.

Exhibit 2: Learning Objectives

Upon completing this financial statement analysis, the users should know about:

- the role of ratios in financial statement analysis
- the ratio categories, their definitions and formulae: profitability, liquidity, asset management and solvency
- the types of standards that are used for comparing the ratios: historical, industry, forward looking
- how to calculate and interpret interpretation financial ratios and their drawbacks
- how to find the data and ratios in Bloomberg and Thomson Reuters databases
- how to make a strategic assessment, to identify accounting issues and to analyze financial management issues

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 DEFUALT>). 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>.

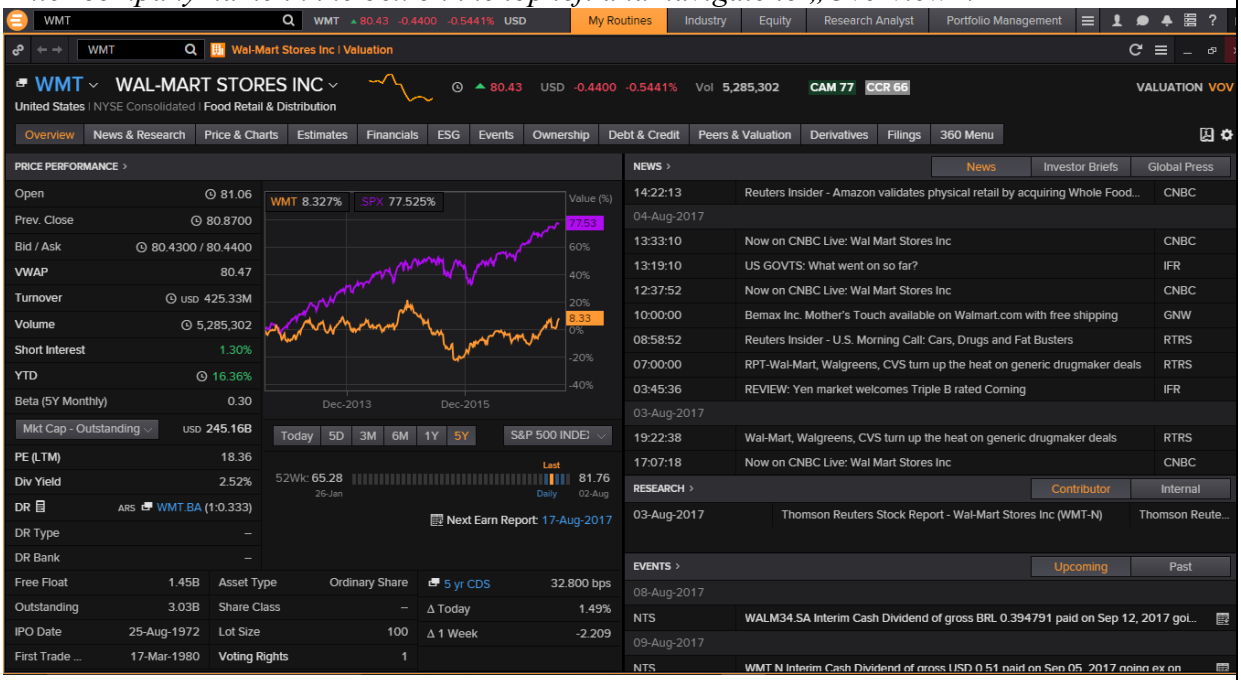
Source: Bloomberg

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

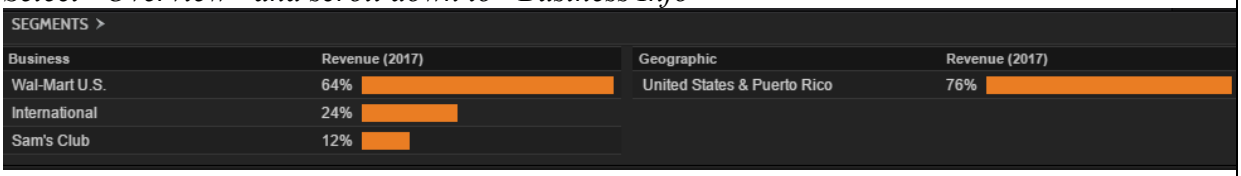
Enter company name in the box on the top left and navigate to „Overview".



Source: Thomson Reuters

Business Segments

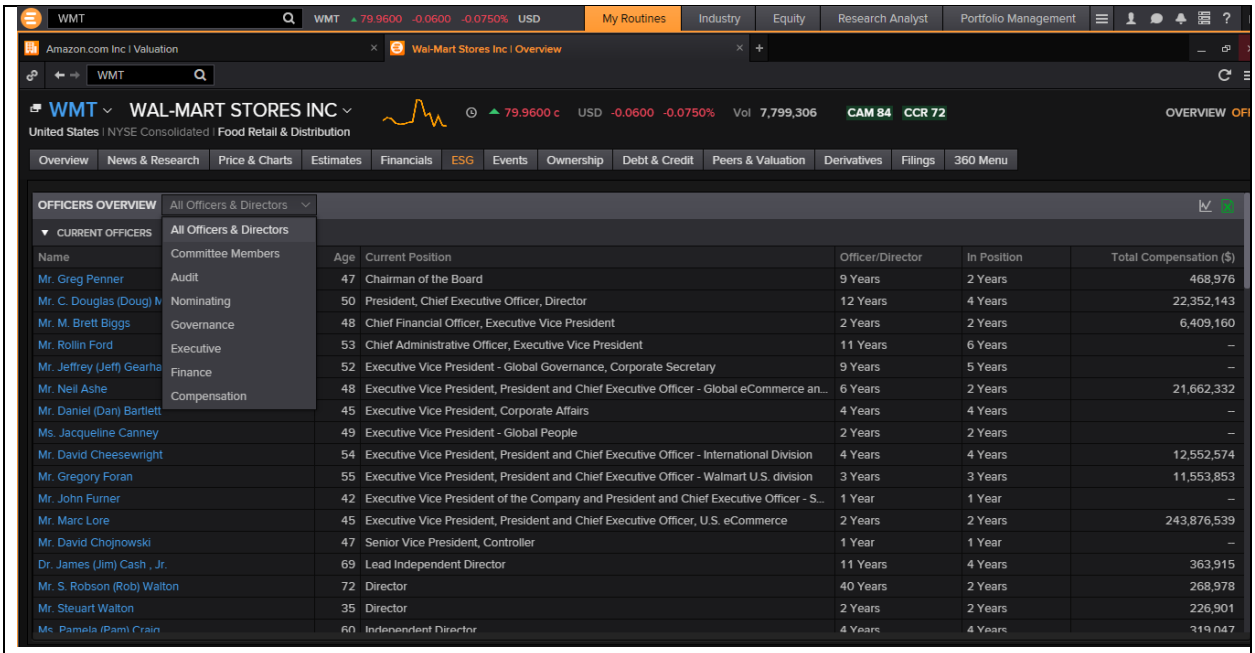
Select "Overview" and scroll down to "Business Info"



Source: Thomson Reuters

Officers

In the tool bar select "ESG" and then click on „Officers" to get the information you look for.



Source: Thomson Reuters

Industry Analysis

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"

THOMSON REUTERS BUSINESS CLASSIFICATION (TRBC)		
Economic Sector	Consumer Non-Cyclicals	54
Business Sector	Food & Drug Retailing	5430
Industry Group	Food & Drug Retailing	543010
Industry	Food Retail & Distribution	54301020
Activity / Sub-Industry	Supermarkets & Convenience Stores	5430102012

NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS)		
Sector	Retail Trade	44-45
Subsector	Food and Beverage Stores	445
Industry Group	Supermarkets and Other Grocery (except Convenience) Stores	4451
International Industry	Supermarkets and Other Grocery (except Convenience) Stores	44511
National Industry	Supermarkets and Other Grocery (except Convenience) Stores	445110

GLOBAL INDUSTRY CLASSIFICATION STANDARD (GICS)		
Sector	Consumer Staples	30
Industry Group	Food & Staples Retailing	3010
Industry	Food & Staples Retailing	301010
Sub-Industry	Hypermarkets & Super Centers	30101040

EUROPEAN UNION CLASSIFICATION	
NACE	Retail sale in non-specialised stores with food, beverages or tobacco predominating (NACE) (47.11)

STANDARD INDUSTRIAL CLASSIFICATION (SIC)
General merchandise stores/Variety Stores/Variety Stores

Source: Thomson Reuters

Major Developments

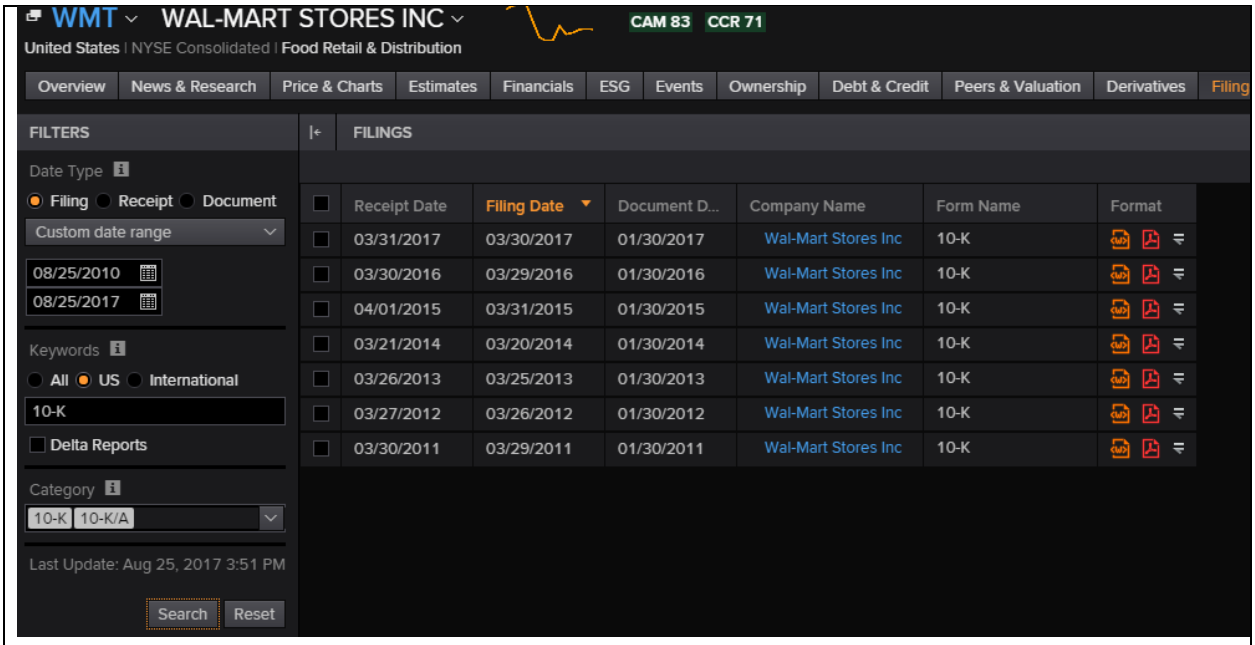
Go to "Events" then "Transactions" and choose "Company Deals"

Source: Thomson Reuters

Annual Report, Management Discussion and Analysis

This information is obtained from the Proxy statement, Information statements or the Annual Report

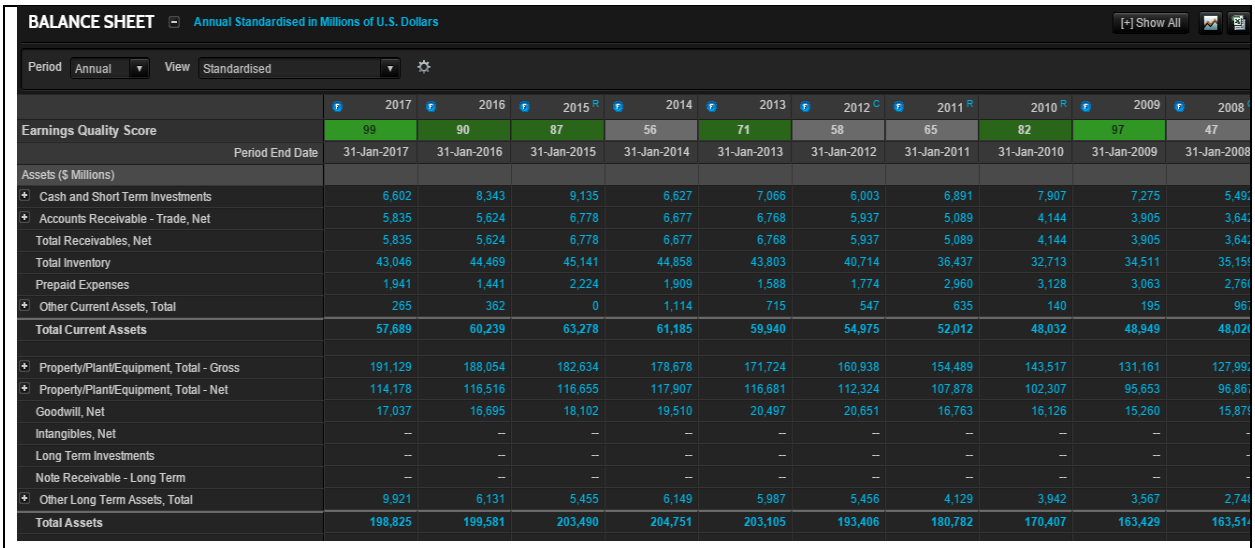
Go to "Fillings", under "Category" type 10-K and click "Search". From there choose the annual report. Item 7 of the annual report provides an overview of the previous year's operations and how the company performed financially.



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.



BALANCE SHEET — Annual Standardised in Millions of U.S. Dollars — [+] Show All

Period: Annual | View: Standardised

	2017	2016	2015 R	2014	2013	2012 C	2011 R	2010 R	2009	2008
Earnings Quality Score	99	90	87	56	71	58	65	82	97	47
Period End Date	31-Jan-2017	31-Jan-2016	31-Jan-2015	31-Jan-2014	31-Jan-2013	31-Jan-2012	31-Jan-2011	31-Jan-2010	31-Jan-2009	31-Jan-2008
Assets ($ Millions)										
+ Cash and Short Term Investments	6,602	8,343	9,135	6,627	7,066	6,003	6,891	7,907	7,275	5,49
+ Accounts Receivable - Trade, Net	5,835	5,624	6,778	6,677	6,768	5,937	5,089	4,144	3,905	3,64
Total Receivables, Net	5,835	5,624	6,778	6,677	6,768	5,937	5,089	4,144	3,905	3,64
Total Inventory	43,046	44,469	45,141	44,858	43,803	40,714	36,437	32,713	34,511	35,15
Prepaid Expenses	1,941	1,441	2,224	1,909	1,588	1,774	2,960	3,128	3,063	2,76
+ Other Current Assets, Total	265	362	0	1,114	715	547	635	140	195	96
Total Current Assets	57,689	60,239	63,278	61,185	59,940	54,975	52,012	48,032	48,949	48,02
+ Property/Plant/Equipment, Total - Gross	191,129	188,054	182,634	178,678	171,724	160,938	154,489	143,517	131,161	127,99
+ Property/Plant/Equipment, Total - Net	114,178	116,516	116,655	117,907	116,681	112,324	107,878	102,307	95,653	96,86
Goodwill, Net	17,037	16,695	18,102	19,510	20,497	20,651	16,763	16,126	15,260	15,87
Intangibles, Net	–	–	–	–	–	–	–	–	–	-
Long Term Investments	–	–	–	–	–	–	–	–	–	-
Note Receivable - Long Term	–	–	–	–	–	–	–	–	–	-
+ Other Long Term Assets, Total	9,921	6,131	5,455	6,149	5,987	5,456	4,129	3,942	3,567	2,74
Total Assets	198,825	199,581	203,490	204,751	203,105	193,406	180,782	170,407	163,429	163,51

Source: Thomson Reuters

Financial Analysis

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.

Exhibit 6: Thomson Reuters Eikon: Financial Analysis: Common-size Financial Statements

INCOME STATEMENT — Annual Common Size (% of Sales)

Period: Annual | View: Common Size (% of Sales)

	2017	2016	2015	2014	2013
Earnings Quality Score	99	90	87	56	71
Period End Date	31-Jan-2017	31-Jan-2016	31-Jan-2015	31-Jan-2014	31-Jan-2013
Revenue	100.00%	100.00%	100.00%	100.00%	100.00%
Other Revenue, Total	–	–	–	–	–
Total Revenue	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Cost of Revenue, Total	74.35%	74.87%	75.17%	75.18%	75.17%
Gross Profit	**25.65%**	**25.13%**	**24.83%**	**24.82%**	**24.83%**
Selling/General/Admin. Expenses, Total	20.96%	20.13%	19.24%	19.18%	18.91%
Research & Development	–	–	–	–	–
Depreciation/Amortization	–	–	–	–	–
Interest Expense, Net - Operating	–	–	–	–	–
Interest/Investment Income - Operating	–	–	–	–	–
Interest Expense(Income) - Net Operating	–	–	–	–	–
Interest Exp.(Inc.),Net-Operating, Total	–	–	–	–	–
Unusual Expense (Income)	–	–	–	–	–
Other Operating Expenses, Total	–	–	–	–	–
Total Operating Expense	95.31%	95.00%	94.41%	94.36%	94.08%
Operating Income	**4.69%**	**5.00%**	**5.59%**	**5.64%**	**5.92%**
Interest Expense, Net Non-Operating					

BALANCE SHEET Annual Common Size (% of Total Assets)

Period: Annual | View: Common Size (% of Total Assets)

	2017	2016	2015 R	2014	2013
Earnings Quality Score	99	90	87	56	71
Period End Date	31-Jan-2017	31-Jan-2016	31-Jan-2015	31-Jan-2014	31-Jan-2013
Assets ($ Millions)					
Cash and Short Term Investments	3.32%	4.18%	4.49%	3.24%	3.48%
Accounts Receivable - Trade, Net	2.93%	2.82%	3.33%	3.26%	3.33%
Total Receivables, Net	2.93%	2.82%	3.33%	3.26%	3.33%
Total Inventory	21.65%	22.28%	22.18%	21.91%	21.57%
Prepaid Expenses	0.98%	0.72%	1.09%	0.93%	0.78%
Other Current Assets, Total	0.13%	0.18%	0.00%	0.54%	0.35%
Total Current Assets	**29.01%**	**30.18%**	**31.10%**	**29.88%**	**29.51%**
Property/Plant/Equipment, Total - Gross	96.13%	94.22%	89.75%	87.27%	84.55%
Property/Plant/Equipment, Total - Net	57.43%	58.38%	57.33%	57.59%	57.45%
Goodwill, Net	8.57%	8.37%	8.90%	9.53%	10.09%
Intangibles, Net	–	–	–	–	–
Long Term Investments	–	–	–	–	–
Note Receivable - Long Term	–	–	–	–	–
Other Long Term Assets, Total	4.99%	3.07%	2.68%	3.00%	2.95%
Total Assets	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Source: Thomson Reuters

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.

Exhibit 7: Thomson Reuters Eikon: Profitability Ratios

Go to "Financials", scroll down to "Key Ratios"

RATIOS - KEY METRICS Annual Standardised in Millions of U.S. Dollars

Period: Annual | View: Standardised

	Industry Median	2017	2016	2015	2014	2013
Earnings Quality Score	61	99	90	87	56	71
Profitability						
Gross Margin	22.4%	25.6%	25.1%	24.8%	24.8%	24.8%
EBITDA Margin	5.6%	6.8%	7.0%	7.5%	7.5%	7.7%
Operating Margin	3.7%	4.7%	5.0%	5.6%	5.6%	5.9%
Pretax Margin	3.0%	4.2%	4.5%	5.1%	5.2%	5.5%
Effective Tax Rate	32.3%	30.3%	30.3%	32.2%	32.9%	31.0%
Net Margin	1.9%	2.9%	3.1%	3.5%	3.5%	3.8%
DuPont/Earning Power						
Asset Turnover	2.52	2.44	2.39	2.38	2.34	2.36
x Pretax Margin	3.0%	4.2%	4.5%	5.1%	5.2%	5.5%
Pretax ROA	7.7%	10.3%	10.7%	12.1%	12.1%	12.9%
x Leverage (Assets/Equity)	2.56	2.56	2.48	2.50	2.69	2.66
Pretax ROE	18.0%	25.9%	26.7%	31.5%	32.3%	34.8%
x Tax Complement	0.67	0.67	0.68	0.66	0.65	0.66
ROE	12.1%	17.2%	18.1%	20.4%	20.8%	23.0%
x Earnings Retention	0.76	0.54	0.57	0.62	0.61	0.68
Reinvestment Rate	8.7%	9.4%	10.4%	12.6%	12.8%	15.7%

Source: Thomson Reuters

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.

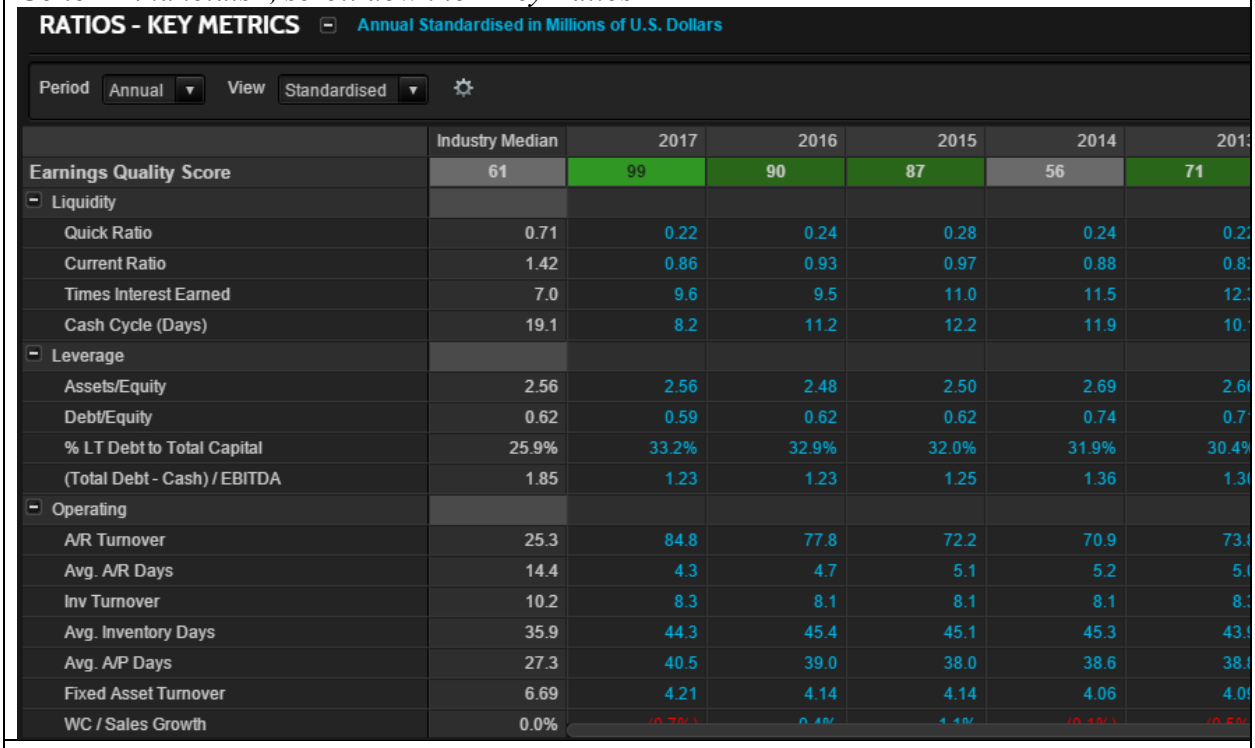
Some of the questions we should ask are:

- 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 mange 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"



RATIOS - KEY METRICS — Annual Standardised in Millions of U.S. Dollars

Period: Annual | View: Standardised

	Industry Median	2017	2016	2015	2014	201
Earnings Quality Score	61	99	90	87	56	71
Liquidity						
Quick Ratio	0.71	0.22	0.24	0.28	0.24	0.2
Current Ratio	1.42	0.86	0.93	0.97	0.88	0.8
Times Interest Earned	7.0	9.6	9.5	11.0	11.5	12.
Cash Cycle (Days)	19.1	8.2	11.2	12.2	11.9	10.
Leverage						
Assets/Equity	2.56	2.56	2.48	2.50	2.69	2.6
Debt/Equity	0.62	0.59	0.62	0.62	0.74	0.7
% LT Debt to Total Capital	25.9%	33.2%	32.9%	32.0%	31.9%	30.4%
(Total Debt - Cash) / EBITDA	1.85	1.23	1.23	1.25	1.36	1.3
Operating						
A/R Turnover	25.3	84.8	77.8	72.2	70.9	73.
Avg. A/R Days	14.4	4.3	4.7	5.1	5.2	5.
Inv Turnover	10.2	8.3	8.1	8.1	8.1	8.
Avg. Inventory Days	35.9	44.3	45.4	45.1	45.3	43.
Avg. A/P Days	27.3	40.5	39.0	38.0	38.6	38.
Fixed Asset Turnover	6.69	4.21	4.14	4.14	4.06	4.0
WC / Sales Growth	0.0%					

Source: Thomson Reuters

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

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.

Exhibit 10: Bloomberg: Activity Analysis
Type WMT EQUITY <GO>. Then type RV <GO> and select the ratios for Wal-Mart and Target

Source: Bloomberg

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?

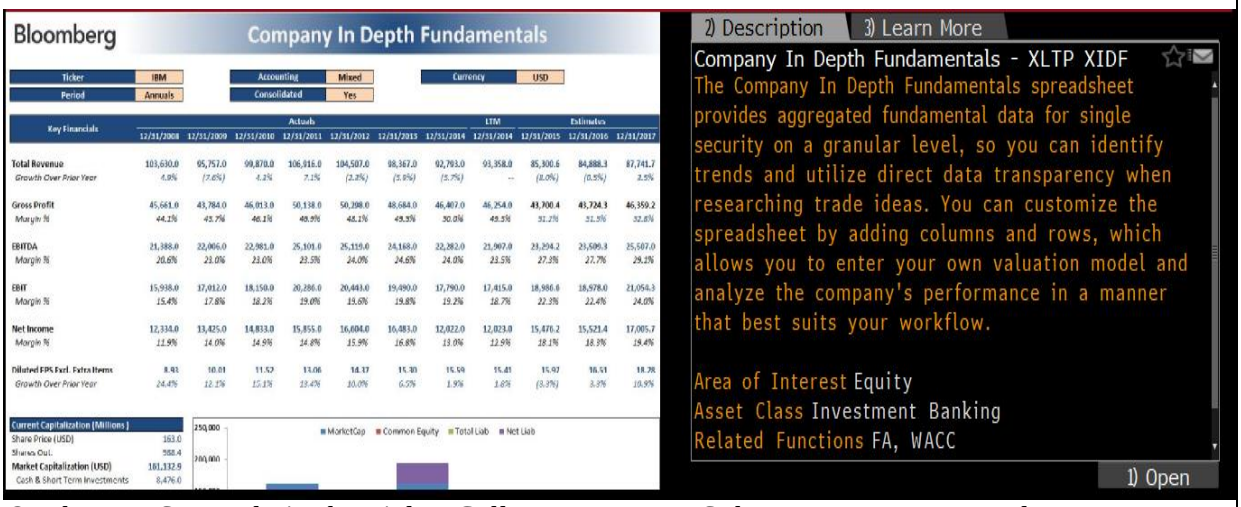
Faculty can lead a discussion on why the company's debt and solvency ratios differ significantly from competitors' and industry average ratios, and assess the implications of those differences for future periods.

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.

Exhibit 11: Bloomberg: Excel Company Fundamentals and Financial Analysis
Launch Bloomberg. Enter WMT EQUITY <GO> then type XIDF and in the drop down menu choose XLTP XIDF and <GO>.

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.

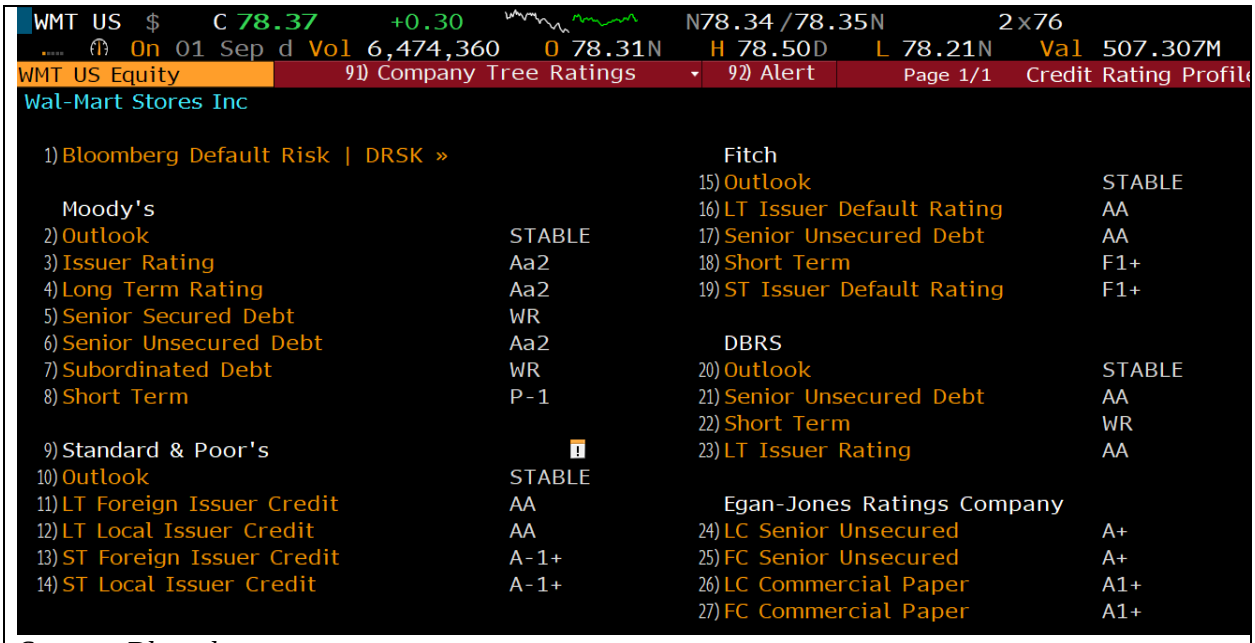
Bloomberg — Company In Depth Fundamentals

Ticker	WMT US	Accounting	Mixed
Period	Annuals	Consolidated	Yes

Ratios	FY 2007 1/31/2007	FY 2008 1/31/2008	FY 2009 1/31/2009	FY 2010 1/31/2010	FY 2011 1/31/2011	FY 2012 1/31/2012	FY 2013 1/31/2013	FY 2014 1/31/2014	FY 2015 1/31/2015	FY 2016 1/31/2016	FY 2017 1/31/2017
Long Term Solvency											
Total Debt/Equity	61.2%	67.1%	62.6%	56.9%	70.0%	70.5%	66.2%	69.6%	53.0%	55.5%	53.1%
Total Debt/Capital	38.0%	40.2%	38.5%	36.3%	41.2%	41.4%	39.8%	41.1%	34.6%	35.7%	34.7%
LT Debt/Equity	49.9%	51.7%	52.9%	51.7%	64.0%	66.0%	54.3%	58.4%	48.7%	50.1%	49.9%
LT Debt/Capital	29.9%	30.0%	31.5%	31.9%	36.2%	36.4%	30.5%	32.3%	30.2%	31.1%	31.5%
Total Liabilities/Total Assets	23.6%	23.5%	24.8%	24.8%	28.2%	28.6%	24.4%	26.4%	25.7%	25.7%	25.8%
EBIT / Interest Exp.	11.33x	10.44x	10.44x	11.62x	11.58x	11.44x	12.33x	11.51x	11.03x	9.46x	9.62x
EBITDA / Interest Exp.	13.04x	11.76x	12.52x	13.94x	14.24x	14.20x	15.11x	14.81x	14.41x	12.97x	13.67x
(EBITDA-CAPEX) / Interest Exp.	5.17x	5.55x	7.64x	8.49x	8.79x	8.67x	9.73x	9.38x	9.58x	8.54x	9.25x
Total Debt/EBITDA	1.50x	1.58x	1.43x	1.33x	1.50x	1.54x	1.49x	1.58x	1.25x	1.38x	1.30x
Net Debt/EBITDA	1.20x	1.39x	1.18x	1.07x	1.28x	1.35x	1.28x	1.38x	1.00x	1.12x	1.09x
Altman Z Score	4.9	4.77	4.94	4.95	4.68	4.67	4.71	4.75	5.14	4.83	4.75

Source: Bloomberg

To find the debt ratings of the company, in the Bloomberg terminal type CRPR <GO>



Source: Bloomberg

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:
BDH("Ticker","RETURN_ON_INV_CAPITAL","Start Date","","per=y","dir=h")

Exhibit 12: Bloomberg Excel API Formula

BDH

BDH (Bloomberg Data History) returns the historical data for a selected security and timeframe.

Syntax

```
=BDH (security, field(s), start date, end date, opt arg 1,opt arg 2)
```

Security	A valid security identifier such as ticker or ticker/exchange combination, CUSIP or ISIN, followed by the relevant yellow market sector key. For example, IBM US Equity, or 009612181 Corp.
Field	One or more recognized field mnemonics representing data you would like to download to Excel. To find field mnemonics, refer to the Field Search on the Bloomberg toolbar in Excel.
Start Date	The date you would like your data to start, in a format acceptable to Excel. For example, MM/DD/YY, DD/MM/YY, etc. You can also enter a relative date (-6CQ).
End Date	A date that is equal to or later than the Start Date or a relative date. To display the historical data up to the current date, leave the End Date blank.

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.

Exhibit 13: Cash Flow Statement

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

WMT US Equity | 96) Actions | 97) Output | 98) Settings | Financial Analysis

ADJ Wal-Mart Stores Inc | Periods 6 Annuals | Currency USD

1) Key Stats | 2) I/S | 3) B/S | 4) C/F | 5) Ratios | 6) Segments | 7) Addl | 8) ESG | 9) Custom

11) Standardized | 12) As Reported

In Millions of USD except Per Share	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Last 12
12 Months Ending	01/31/2013	01/31/2014	01/31/2015	01/31/2016	01/31/2017	07/31/201
Cash from Operating Activities						
+ Net Income	16,999.0	16,022.0	16,363.0	14,694.0	13,643.0	12,729.
+ Depreciation & Amortization	8,501.0	8,870.0	9,173.0	9,454.0	10,080.0	10,344.
+ Non-Cash Items	1,151.0	1,332.0	1,018.0	1,124.0	1,617.0	2,876.
+ Deferred Income Taxes	-133.0	-279.0	-503.0	-672.0	761.0	822.
+ Other Non-Cash Adj	1,284.0	1,611.0	1,521.0	1,796.0	856.0	2,054.
+ Chg in Non-Cash Work Cap	-1,060.0	-2,823.0	2,295.0	2,117.0	6,190.0	2,010.
+ (Inc) Dec in Accts Receiv	-614.0	-566.0	-569.0	-19.0	-402.0	-260.
+ (Inc) Dec in Inventories	-2,759.0	-1,667.0	-1,229.0	-703.0	1,021.0	199.
+ Inc (Dec) in Accts Payable	1,061.0	531.0	2,678.0	2,008.0	3,942.0	2,613.
+ Inc (Dec) in Other	1,252.0	-1,121.0	1,415.0	831.0	1,629.0	-542.
+ Net Cash From Disc Ops	—	-144.0	-285.0	0.0	0.0	0.
Cash from Operating Activities	25,591.0	23,257.0	28,564.0	27,389.0	31,530.0	27,959.
Cash from Investing Activities						
+ Change in Fixed & Intang	-12,366.0	-12,388.0	-11,604.0	-10,842.0	-10,163.0	-10,015.
+ Disp in Fixed & Intang	532.0	727.0	570.0	635.0	456.0	
+ Disp of Fixed Prod Assets	532.0	727.0	570.0	635.0	456.0	
+ Disp of Intangible Assets	0.0	0.0	0.0	0.0	0.0	
+ Acq of Fixed & Intang	-12,898.0	-13,115.0	-12,174.0	-11,477.0	-10,619.0	
+ Acq of Fixed Prod Assets	-12,898.0	-13,115.0	-12,174.0	-11,477.0	-10,619.0	
+ Acq of Intangible Assets	0.0	0.0	0.0	0.0	0.0	
+ Net Change in LT Investment	0.0	0.0	0.0	0.0	0.0	0.
+ Dec in LT Investment	0.0	0.0	0.0	0.0	0.0	0.
+ Inc in LT Investment	0.0	0.0	0.0	0.0	0.0	0.
+ Net Cash From Acq & Div	-316.0	0.0	671.0	246.0	-1,801.0	-1,152.
+ Cash from Divestitures	0.0	0.0	671.0	246.0	662.0	1,674.
+ Cash for Acq of Subs	-316.0	0.0	0.0	0.0	-2,463.0	-2,826.
+ Cash for JVs	0.0	0.0	0.0	0.0	0.0	0.
+ Other Investing Activities	71.0	-138.0	-192.0	-79.0	-2,023.0	-1,963.
+ Net Cash From Disc Ops	—	—	—	—	0.0	0.
Cash from Investing Activities	-12,611.0	-12,526.0	-11,125.0	-10,675.0	-13,987.0	-13,130.
Cash from Financing Activities						
+ Dividends Paid	-5,361.0	-6,139.0	-6,185.0	-6,294.0	-6,216.0	-6,171.
+ Cash From (Repayment) Debt	1,487.0	3,015.0	-5,018.0	-3,158.0	-3,591.0	-1,368.
+ Cash From (Repay) ST Debt	2,754.0	911.0	-6,288.0	1,235.0	-1,673.0	1,328.
+ Cash From LT Debt	211.0	7,072.0	5,174.0	39.0	137.0	1,510.
+ Repayments of LT Debt	-1,478.0	-4,968.0	-3,904.0	-4,432.0	-2,055.0	-4,206.
+ Cash (Repurchase) of Equity	-7,600.0	-6,683.0	-1,015.0	-4,112.0	-8,298.0	-7,893.
+ Increase in Capital Stock	0.0	0.0	0.0	0.0	0.0	0.
+ Decrease in Capital Stock	-7,600.0	-6,683.0	-1,015.0	-4,112.0	-8,298.0	-7,893.
+ Other Financing Activities	-498.0	-982.0	-2,853.0	-2,558.0	-824.0	-914.
+ Net Cash From Disc Ops	—	—	—	—	0.0	0.
Cash from Financing Activities	-11,972.0	-10,789.0	-15,071.0	-16,122.0	-18,929.0	-16,346.
Effect of Foreign Exchange Rates	223.0	-442.0	-514.0	-1,022.0	-452.0	310.
Net Changes in Cash	1,231.0	-500.0	1,854.0	-430.0	-1,838.0	-1,207.
Cash Paid for Taxes	7,304.0	8,641.0	8,169.0	8,111.0	4,507.0	
Cash Paid for Interest	2,262.0	2,362.0	2,433.0	2,540.0	2,351.0	

Source: Bloomberg

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

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.

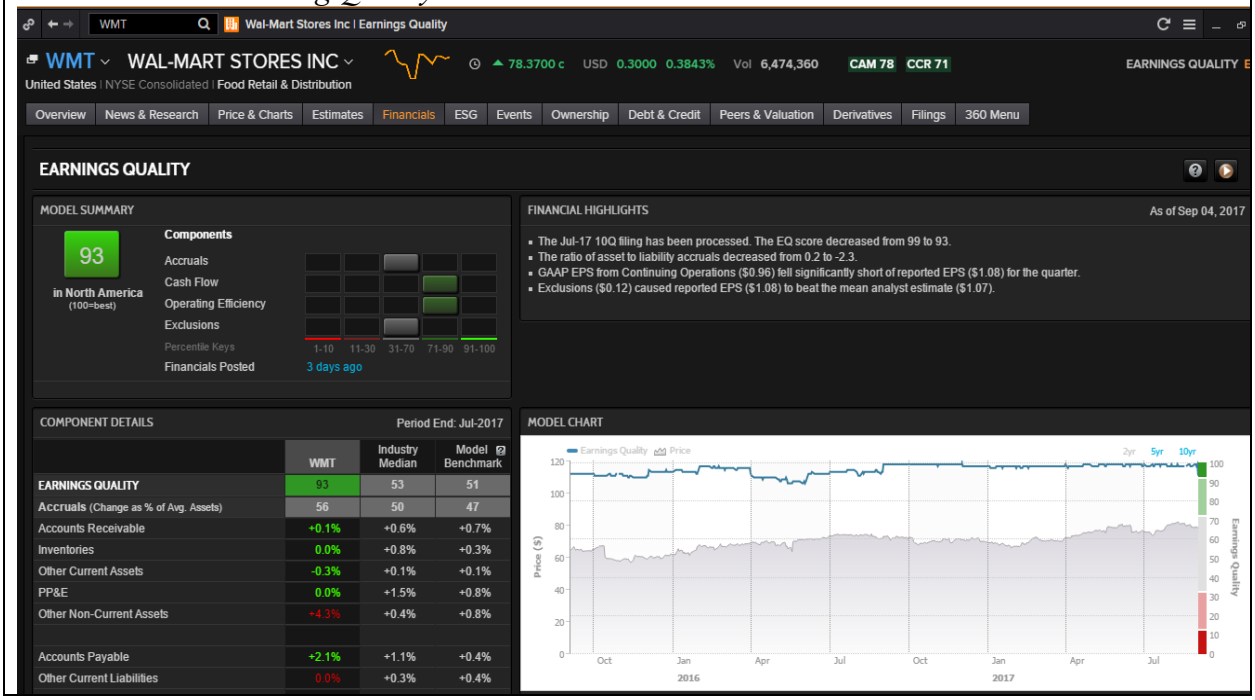
Students should be guided to think about questions related to a qualitative analysis, such as:
- Are the financial statements prepared in accordance with accounting standards applied on a consistent basis?
- Are there any hints that the company might have managed company's earnings to present a more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

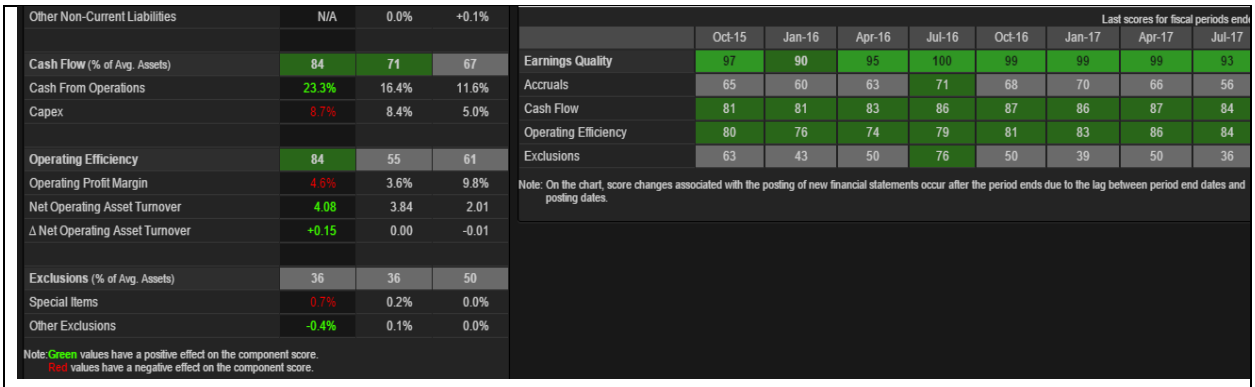
Earnings Quality

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"





Other Non-Current Liabilities	N/A	0.0%	+0.1%
Cash Flow (% of Avg. Assets)	84	71	67
Cash From Operations	23.3%	16.4%	11.6%
Capex	8.7%	8.4%	5.0%
Operating Efficiency	84	55	61
Operating Profit Margin	4.6%	3.6%	9.8%
Net Operating Asset Turnover	4.08	3.84	2.01
Δ Net Operating Asset Turnover	+0.15	0.00	-0.01
Exclusions (% of Avg. Assets)	36	36	50
Special Items	0.7%	0.2%	0.0%
Other Exclusions	-0.4%	0.1%	0.0%

Note: Green values have a positive effect on the component score.
Red values have a negative effect on the component score.

Last scores for fiscal periods end

	Oct-15	Jan-16	Apr-16	Jul-16	Oct-16	Jan-17	Apr-17	Jul-17
Earnings Quality	97	90	95	100	99	99	99	93
Accruals	65	60	63	71	68	70	66	56
Cash Flow	81	81	83	86	87	86	87	84
Operating Efficiency	80	76	74	79	81	83	86	84
Exclusions	63	43	50	76	50	39	50	36

Note: On the chart, score changes associated with the posting of new financial statements occur after the period ends due to the lag between period end dates and posting dates.

Source: Thomson Reuters

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"

WMT | Wal-Mart Stores Inc | Top Analysts

Top Analysts for WMT United States Wal-Mart Stores Inc

Estimate Period: Summary | Recommendation Period: T24M

	Overall Summary		Estimate Accuracy			Recommendation Performance		
	Analyst	Contributor	Score	Rating	Covg %	Score	Rating	Covg %
	Trussell, Paul	Deutsche Bank Equity Research	99	★★★★★		32	★★☆☆☆	
	Drbul, Robert	Guggenheim Securities LLC	99	★★★★★		91	★★★★★	
	Yruma, Edward	KeyBanc Capital Markets Inc.	89	★★★★★		83	★★★★☆	
	Ciccarelli, Scot	RBC Capital Markets	86	★★★★★		6	★☆☆☆☆	
!	Schoen Mace, Jessica	Nomura	78	★★★★★		82	★★★★☆	
	Feldman, Joseph	Telsey Advisory Group	75	★★★★★		64	★★★☆☆	
	Binder, Daniel	Jefferies	73	★★★★☆		82	★★★★☆	
	Bugatch, Budd	Raymond James	73	★★★★☆		98	★★★★★	
	Bender, Scott	Cleveland Research	72	★★★★☆		32	★★☆☆☆	
	Cerankosky, Charles	Northcoast Research	68	★★★★☆		84	★★★★☆	
!	Melich, Gregory	EVERCORE ISI	67	★★★★☆		33	★★☆☆☆	
	Fassler, Matthew J.	Goldman Sachs	64	★★★★☆		40	★★★☆☆	
!	Zolidis, John	Buckingham Research Group, The	60	★★★★☆		34	★★★☆☆	
	McKeever, Patrick	MKM Partners	58	★★★★☆		32	★★☆☆☆	
	Bienvenu, Ben	Stephens Inc.	57	★★★★☆		12	★★☆☆☆	
!	Kelly, Edward	-	56	★★★☆☆		75	★★★★☆	
	Gutman, Simeon	Morgan Stanley	52	★★★☆☆		32	★★☆☆☆	
	McShane, CFA, Kate	Citi	46	★★☆☆☆		30	★★☆☆☆	
	Hood, Wayne	BMO Capital Markets	43	★★☆☆☆		9	★☆☆☆☆	
	Horvers, Christopher	JPMorgan	40	★★☆☆☆		32	★★☆☆☆	
	Benedict, Peter	Robert W. Baird & Co., Inc.	36	★★☆☆☆		92	★★★★★	
	Chen, Oliver	Cowen and Company	36	★★☆☆☆		77	★★★★☆	
!	Exstein, Michael	Credit Suisse Fixed Income – Pre 2003	29	★★☆☆☆		16	★★☆☆☆	
	Mushkin, Scott	Wolfe Research	26	★☆☆☆☆		6	★☆☆☆☆	
	Ohmes, Robert	Bank of America Merrill Lynch	16	★☆☆☆☆		51	★★★☆☆	
	Lasser, Michael	UBS Equities	15	★☆☆☆☆		32	★★☆☆☆	
	Short, Karen	Barclays	10	★☆☆☆☆		86	★★★★☆	

Source: Thomson Reuters

Exhibit 16: Bloomberg: How to Find Analysts Recommendations and Reports

Type ANR <GO> and BRC <GO>

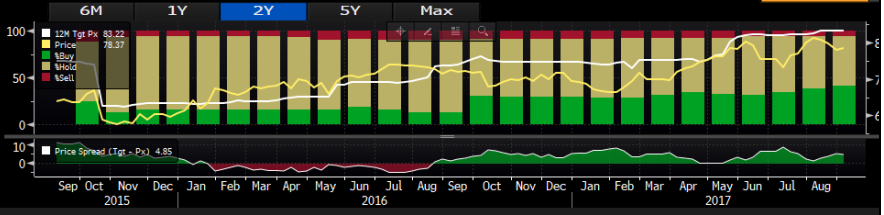
WMT US $ C 78.37 +0.30 N78.34 /78.35N 2x76

On 01 Sep d Vol 6,474,360 O 78.31N H 78.50D L 78.21N Val 507.307M

WMT US Equity | Actions | Alert | Analyst Recommendations

Wal-Mart Stores Inc — As of 09/04/17

Consensus Rating		▲ 3.68
Buys	41.2%	14
Holds	52.9%	18
Sells	5.9%	2
12M Tgt Px	28/38	83.22
Last Price		78.37
Pricing Currency		USD
Return Potential		6.2%
LTM Return		11.1%



Showing 36 of 39 sources

	Firm	Analyst	Recommendation	Tgt Px	Date↓	1 Yr Rtn	BARR	Rank
1)	Raymond James	Beryl Bugatch	strong buy	90.00	09/01/17	11.08%	5	14
2)	Guggenheim Securities	Robert S Drbul	buy	90.00	09/01/17	13.86%	1	6
3)	Wolfe Research	Scott A Mushkin	underperform	64.00	08/31/17	-11.08%		12
4)	Stephens Inc	Ben Bienvenu	overweight	91.00	08/30/17	-2.84%		
5)	Gordon Haskett	Chuck Grom	buy	88.00	08/30/17			
6)	Northcoast Research	Charles E Ceranko...	neutral		08/28/17	0.00%		8
7)	Bernstein	Brandon Fletcher	market perform	80.00	08/25/17			
8)	Baird	Peter S Benedict	outperform	85.00	08/23/17	11.08%	5	3
9)	Daiwa Securities	Kahori Tamada	neutral	81.12	08/23/17	0.00%		
10)	Susquehanna Financial	Bill Dreher	Positive	93.00	08/23/17			
11)	Telsey Advisory Group	Joseph I Feldman	outperform	88.00	08/23/17	8.89%		
12)	Consumer Edge Research	David A Schick	equalweight	75.00	08/23/17	0.00%		2

Source: Bloomberg

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 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".

RATIOS - KEY METRICS — Annual Standardised in Millions of U.S. Dollars — [-] Hide All

Period: Annual | View: Standardised

	Industry Median	2017	2016	2015	2014	2013	2012	2011	2010	2009
Earnings Quality Score	53	99	90	87	56	71	58	65	82	97
DuPont/Earning Power										
Asset Turnover	2.48	2.44	2.39	2.38	2.34	2.36	2.39	2.40	2.44	2.47
x Pretax Margin	3.1%	4.2%	4.5%	5.1%	5.2%	5.5%	5.4%	5.6%	5.4%	5.2%
Pretax ROA	7.5%	10.3%	10.7%	12.1%	12.1%	12.9%	13.0%	13.4%	13.3%	12.8%
x Leverage (Assets/Equity)	2.61	2.56	2.48	2.50	2.69	2.66	2.71	2.64	2.42	2.50
Pretax ROE	17.6%	25.9%	26.7%	31.5%	32.3%	34.8%	34.8%	33.9%	32.6%	32.1%
x Tax Complement	0.67	0.67	0.68	0.66	0.65	0.66	0.65	0.70	0.65	0.64
ROE	11.6%	17.2%	18.1%	20.4%	20.8%	23.0%	22.5%	22.1%	21.3%	20.4%
x Earnings Retention	0.76	0.54	0.57	0.62	0.61	0.68	0.68	0.71	0.71	0.72
Reinvestment Rate	8.9%	9.4%	10.4%	12.6%	12.8%	15.7%	15.3%	15.7%	15.1%	14.6%

Source: Thomson Reuters

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.

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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 1 is due after the 6^{th} class and Part II after the 13^{th} 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

Part 1 Requirements

Due Date: After the 6th class

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?

<u>Other Assessments: [1 page maximum]</u>

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?

<u>Outside Assessments: [1 page maximum]</u>

- 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]

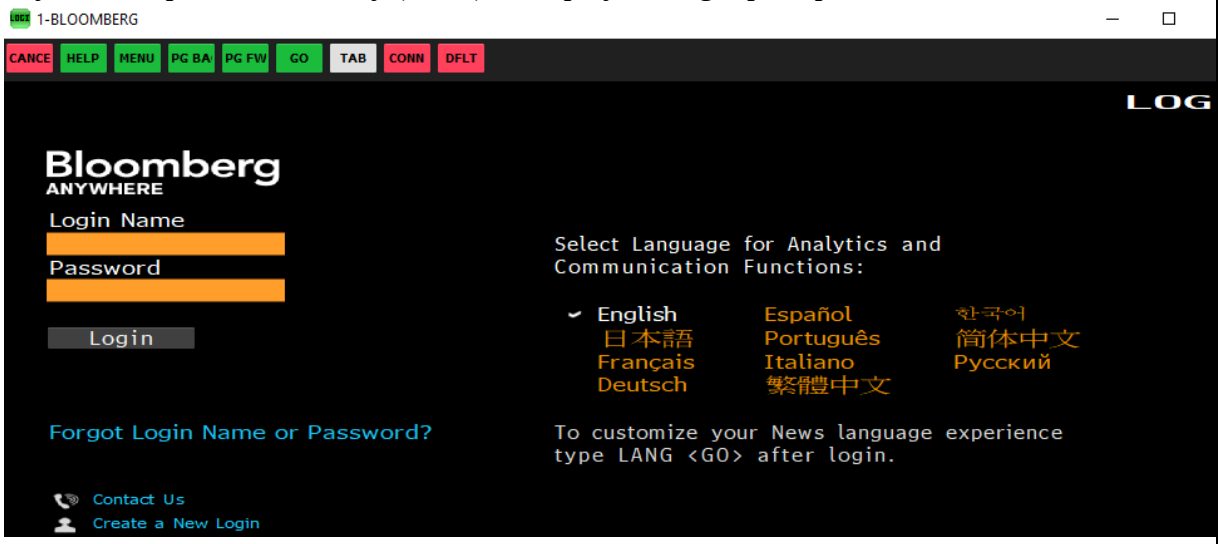
- Integrate the various ratio analyses for the most current year for your company and its benchmark [Refer to p. 190 of textbook for ROE framework]
- Use the ROE model to provide an integrative analysis for your company that leverages all the information, both financial and non-financial, that you have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

APPENDIX B

Bloomberg: Creating a new login

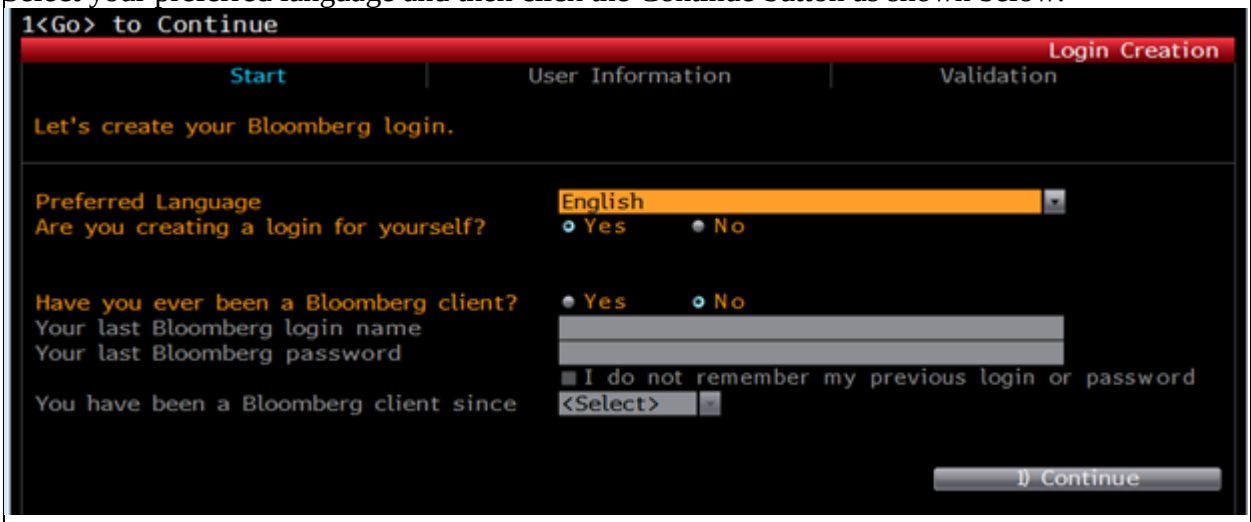
To get started, go to a computer with a Bloomberg software configured and licensed.

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.



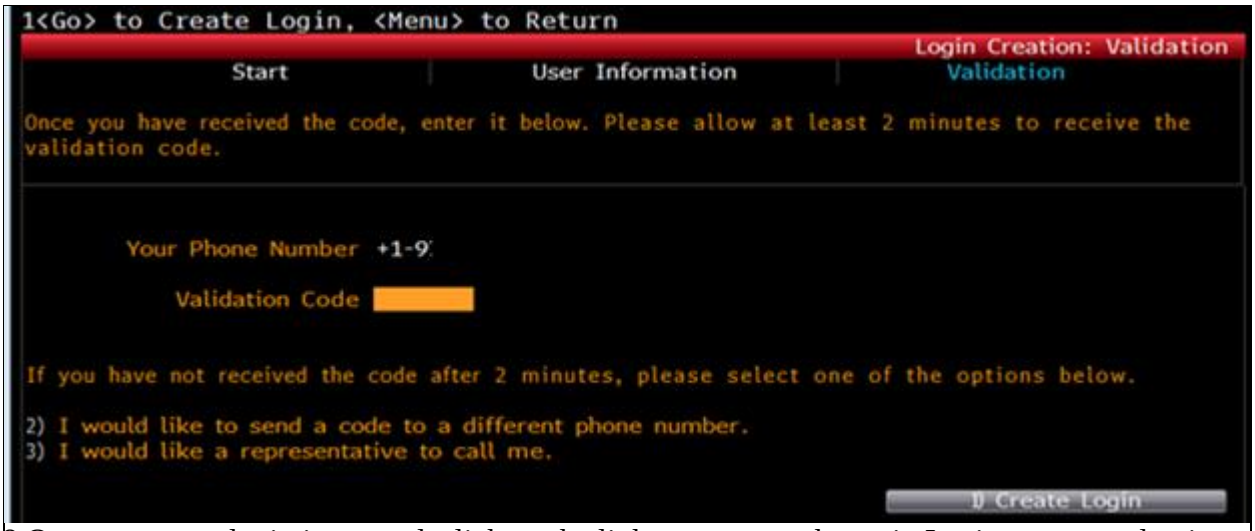
3. Click on the prompt to Create a New Login

Select your preferred language and then click the Continue button as shown below.

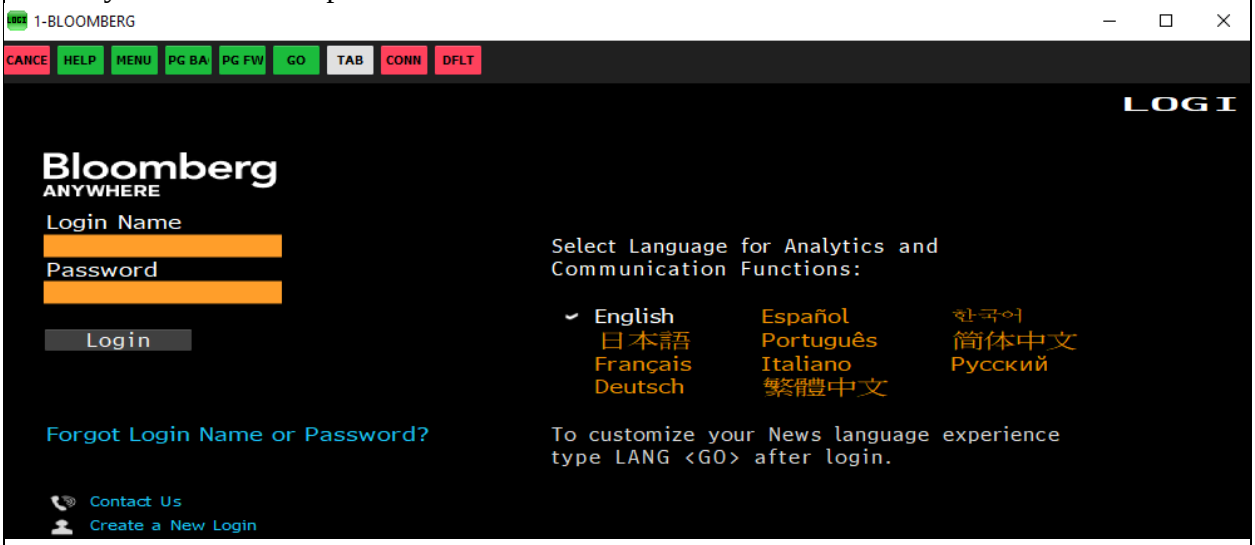


5. Fill in the requested information such as your name, phone number(s) and e-mail address. You should provide your e-mail address for the school you attend. Click the Continue button when done.
6. Once the contact information is filled out, Bloomberg will generate a validation code that you will need 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