

Bloomberg Terminals as a Learning Tool for Business Students: Applications and Discussion

Marco I. Bonelli, PhD – Dayanda Sagar Business School

Bangalore, Karnataka-India

Abstract

Traditional education tends to emphasize acquiring knowledge and demonstrating an understanding of facts and ideas. While knowledge and comprehension do form the foundation of a good education, there is increasing evidence that use of a larger practical component enhances business school students' performance. In turn, we argue that educators should therefore try to equip students for the technology they are likely to encounter and the skills they are likely to need. This paper provides a series of applications using the Bloomberg Professional Service designed to contribute to the quality of education and provide students with the opportunity for engaging hands-on training and the confidence to be effective in the workplace.

Keywords: Bloomberg, Bloomberg Professional Service (BPS), Learning Tool, Technology, Excel, Experiential Learning, Investments.

Introduction

Duggal (2006) was one of the first scholars to advocate the use of technology in finance literacy to promote active teaching, he therefore suggested the use of finance laboratories. The use of labs has been a powerful resource for enhancing student learning experiences.

A primary focus of business schools today is to ensure that students are equipped with the knowledge, tools, and skills necessary to succeed in an increasingly competitive workplace. One of the ways this has been accomplished is by integrating relevant professional technologies into the curriculum. Pfeffer and Fong (2002) have suggested that a larger clinical or practical component may be essential to imparting lasting knowledge that affects the performance of business school graduates. This opinion has been confirmed by Hawtrey (2007) who states that students expect an enhanced learning experience and indicate a clear preference for experiential learning, although Hawtrey makes no claims about the benefits of experiential learning. Within the finance curriculum, Investments courses are often used to elevate learning from the lower

**The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands**

cognitive levels of knowledge and comprehension to higher cognitive levels of analysis, synthesis, and evaluation. Schadler (2007) provides examples of how practical learning experiences using readily available sources can be easily incorporated in Investments courses to achieve higher levels of learning, while Payne and Tanner (2011) propose a financial technology course in the undergraduate finance curriculum. To further their mission, many business schools have therefore made substantial programmatic allocations to experiential learning tools like students' managed investment funds (Mallet, Belcher & Boyd, 2010), dedicated physical facilities like trading labs (Kish & Hogan, 2012), and specialized industry-standard information technologies like the Bloomberg Professional Service (BPS) (Coe, 2007; Scott, 2010). BPS has been a source of financial information and research since the mid 1980's when Michael Bloomberg created the platform and began marketing it to investment banks around the world. Today, Bloomberg terminals (computers which allow access to BPS) are found in many different environments, in both financial and non-financial institutions, and many thousands of users worldwide utilize BPS in their everyday professional lives. In addition to BPS, other platforms (for example, Thomson Reuters, FactSet, Standard and Poor's Capital IQ, and Morningstar Direct) also provide various combinations of news, historic and current data, analytical tools, research capabilities, communication, and transactional capabilities. Although there are several avenues for students and professionals to acquire financial information, our paper focuses on BPS, with its seamless integration of data, news, and analytics, providing a powerful and flexible all-inclusive platform. Our experience has shown us that BPS can also enrich curriculum and empower students. Students are empowered knowing that they are using the same information platform utilized by many decision makers and top executives in business, finance, and government. The students are using a tool that is powerful and flexible due to its ability to seamlessly integrate historical and real-time business data, news, and analytics in a single comprehensive platform. As such, BPS can bring the world of business and finance to the classroom and expose students to content needed in the profession. While there are certainly many sources of financial information, BPS terminals have been increasingly finding their way into academic settings and this is our primary focus. In addition, it provides them with an important tool of employability (Sharma, 2015), because it brings them closer to real experiences. The use of statistical packages and finance has increased in

**The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands**

the teaching of international finance (Sharma, 2015), as well as the use and analysis of accounting, economic and finance in real time.

In this paper, we describe a few possible ways to enhance the learning experience by integrating the BPS platform into Investments courses.

Bloomberg in Colleges and Universities

Scott (2010) reports 868 Bloomberg terminals at 382 colleges and universities in 2007. According to Bloomberg LP, there has been significant growth in Bloomberg's presence across the top institutions worldwide in recent years. Academic institutions now employ over 6,000 terminals (personal communication, J. Pannikot, Bloomberg LP, October 9, 2014). In introducing BPS, Scott also describes his experience in teaching a one-credit Bloomberg Certification course to upper-level undergraduate students. The Bloomberg Certification training, which is part of BPS and offered on the terminals themselves, reduces students' apprehensions about the extent of information and complexity of the system, while also providing them with external validation for their efforts. While the structure and content of the training modules has evolved over time, the pedagogical process described by Scott can still be applied today. The familiarity and skill derived because of the certification process can then be applied to specific classroom situations. Coe (2007) believes that use of Bloomberg technology brings increased currency in the education that finance classes offer to students, enhances the students' ability to analyze data and communicate information and facilitates the transition from the classroom to the workplace. BPS contains a wide array of current and historic information. Coe illustrates its use in explaining some concepts in financial management, investments, international finance, derivatives, and banking courses. More importantly, Coe finds that despite the perception of having a high cost, a BPS terminal can be a cost-effective and convenient alternative to library resources. The use of BPS terminals in a classroom setting can have many benefits for students. It can increase the students' ability to perform research and analysis in nearly every facet of finance and provide them with a competitive advantage in a competitive job market. Equity, fixed income, foreign exchange, and commodity analytics are enhanced greatly by the ability to find, interpret, and integrate relevant information. Use of BPS terminals is not restricted merely to the Finance curriculum as BPS functionality can

The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands

be useful not just in related disciplines like Accounting and Economics, but also in Market Research, Supply Chain Management, Data Analytics, and International Business courses.

Examples of Bloomberg Assignments

These assignments presume a basic working familiarity with the Bloomberg terminal. Students gain an increasing familiarity with the Bloomberg terminals over the course of the semester by completing the Certification process interspersed with some combination of the assignments described in this section. The Bloomberg Certification process itself is described by Scott (2010) and currently comprises five modules. The first module comprises four units and is collectively called Bloomberg Essentials while the next four modules offer exposure to equity, fixed income, foreign exchange, and commodities. We expect all our students to complete each of these modules. The assignments are normally used in Investment's introductory courses, and they are supposed to increase students' confidence in working with the Bloomberg terminals and help reinforce the theoretical concepts which are introduced in this course. These assignments are presented below:

ASSIGNMENT 1 (Basic Financial Analysis): This assignment explores the various financial statements over time and interprets key statistics and ratios. Steps for Completion: Log in to your Bloomberg account; begin typing the company name (an example would be "Apple Computer") into the command bar at the top of the screen; then, use the mouse to click on the desired auto-filled option (an example would be APPL US EQUITY). Once the company home page has been accessed, type "FA" into the command bar and press enter to access financial statement information. Explore the various options available. Deliverables: Attach a single landscape-mode screen capture of the "Key Stats" tab to your one-page report. Your one-page report should (1) present the Gross Profit Margin (a Profitability Ratio), Interest Coverage Ratio (a Debt Ratio), Quick Ratio (a liquidity Ratio), Daily Sales Outstanding (an Effectiveness Ratio), and the P/E Ratio (a Market Ratio) for the most recent year, and (2) very briefly explain the calculation of each ratio, and the trend in each of these ratios over the past five years.

Exhibit 1 from BPS (Assignment 1)

The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands

AAPL US \$ C 150.72 +1.3% Q150.74 / 150.77Q 31x30							
On 17 Nov d Vol 80,389,400 O 146.43N H 151.48Q L 146.15P Val 12.031B							
AAPL US Equity 96) Actions 97) Export 98) Settings							
Apple Inc ASC 842 BQL Periodicity Annuals Cur FRC (USD)							
1) Key Stats 2) I/S 3) B/S 4) C/F 5) Ratios 6) Segments 7) Addl 8) ESG 9) Custom 10) Shared							
11) BBG Adj Highlights 12) BBG GAAP Highlights 13) Company Model 14) Earnings 15) Enterprise Value 16) EV Ex Operating Leases 17) Mul							
In Millions of USD	2019 Y~	2020 Y	2021 Y	2022 Y	Current/LTM	2023 Y Est	2024 Y Est
12 Months Ending	09/28/2019	09/26/2020	09/25/2021	09/24/2022	09/24/2022	09/30/2023	09/30/2024
Market Capitalization	972,269.0	1,906,150.9	2,413,423.4	2,398,369.4	2,397,671.5		
- Cash & Equivalents	205,898.0	191,830.0	190,516.0	169,109.0	169,109.0		
+ Preferred & Other	0.0	0.0	0.0	0.0	0.0		
+ Total Debt	108,047.0	122,278.0	136,522.0	132,480.0	132,480.0		
Enterprise Value	874,418.0	1,836,598.9	2,359,429.4	2,361,740.4	2,361,042.5		
Revenue, Adj	260,174.0	274,515.0	365,817.0	394,328.0	394,328.0	406,495.7	429,893.4
Growth %, YoY	-2.0	5.5	33.3	7.8	7.8	3.1	5.8
Gross Profit, Adj	98,392.0	104,956.0	152,836.0	170,782.0	170,782.0	174,825.7	185,804.2
Margin %	37.8	38.2	41.8	43.3	43.3	43.0	43.2
EBITDA, Adj	76,477.0	78,844.0	121,933.0	132,441.0	130,541.0	131,250.4	137,047.5
Margin %	29.4	28.7	33.3	33.6	33.1	32.3	31.9
Net Income, Adj	55,280.5	57,346.2	94,455.6	99,803.0	99,803.0	98,684.5	104,259.4
Margin %	21.2	20.9	25.8	25.3	25.3	24.3	24.3
EPS, Adj	2.97	3.28	5.60	6.11	6.11	6.26	6.81
Growth %, YoY	0.1	10.3	70.8	9.2	8.9	2.4	8.8
Cash from Operations	69,391.0	80,674.0	104,038.0	122,151.0	122,151.0		
Capital Expenditures	-10,495.0	-7,309.0	-11,085.0	-10,708.0	-10,708.0	-11,867.3	-12,656.5
Free Cash Flow	58,896.0	73,365.0	92,953.0	111,443.0	111,443.0	102,928.3	115,142.3

ASSIGNMENT 2 (Beta): This assignment will reinforce the concept of beta for a given company. Steps for Completion: Once the home page for a company has been accessed, type "BETA" into the command bar and press "ENTER". Explore the various options available. Deliverables: Attach a single landscape-mode screen capture of the data to your one-page report. Your one-page report should (1) present the beta value obtained using sixty monthly observations, (2) briefly explain the relevance of R2 in the linear regression analysis, and (3) comment on the relative systematic risk of your company.

The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands

Exhibit 2 from BPS (Assignment 2)

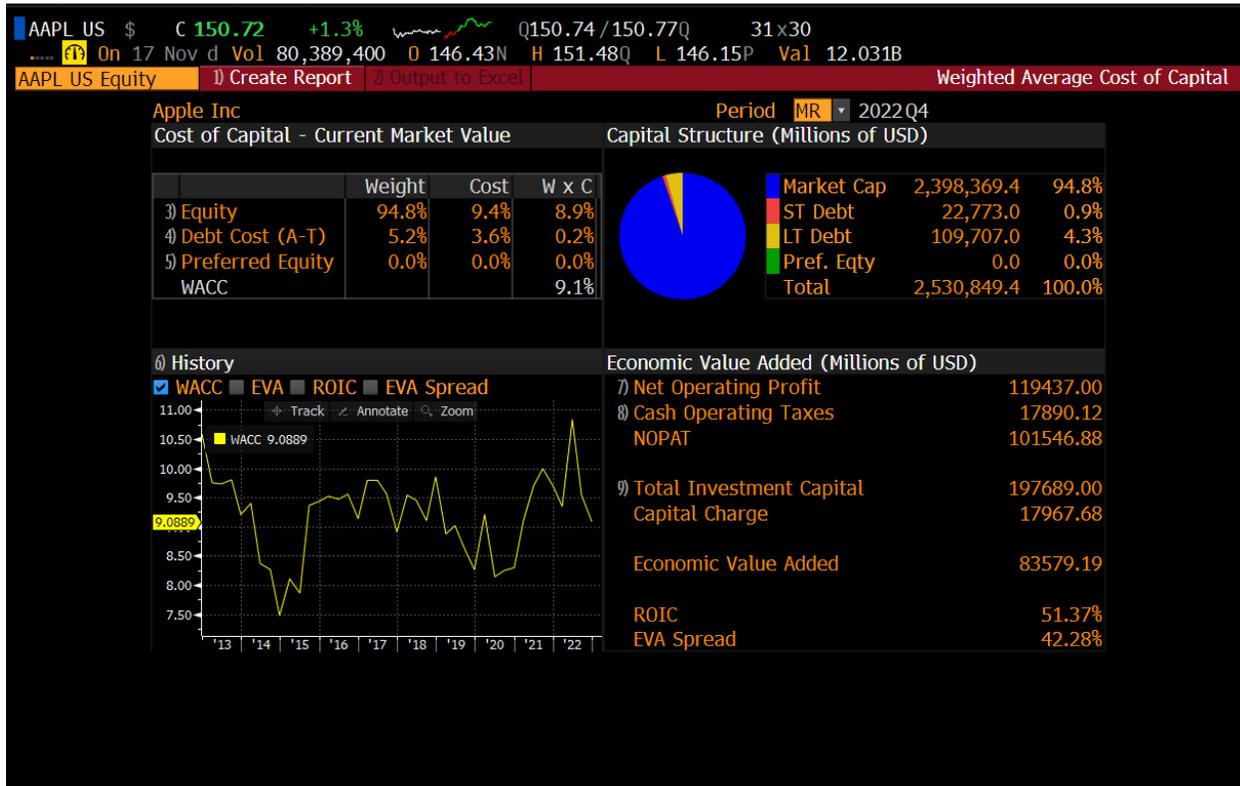


ASSIGNMENT 3 (Weighted Average Cost of Capital): This assignment will reinforce the concept of WACC for a given company. Steps for Completion: Once the home page for a company has been accessed, type “WACC” into the command bar and press enter. Explore the various options available. Deliverables: Attach a single landscape-mode screen capture of the data to your one-page report. Your one-page report should (1) present the WACC value obtained for the most recent

**The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands**

time period, (2) briefly explain the calculation of the cost of each capital component, and (3) comment on the relevance of the EVA spread and its trend over the past few years.

Exhibit 3 from BPS (Assignment 3)



ASSIGNMENT 4 (Prices and Returns): This assignment reinforces the concept of prices and returns and provides a histogram of returns as an introduction to the concept of risk. Steps for Completion: Once the home page for a company has been accessed, explore Historic Prices by typing “HP” into the command bar and pressing enter. Familiarize yourself with the various options available. Change the period from daily to yearly, customize the date range to include 15-20 years of data, and press enter to view year-end prices along with the high and low prices over the selected period. Access the Historic Returns Histogram by typing “HRH” into the command bar and pressing enter. Explore the various options available. Change the Type to Total Return and the Period to Monthly and customize the date range to include about 200 observations and the number of bins to 10. Then press enter to view a histogram of monthly total returns and some other

**The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands**

univariate statistics over the selected period. Deliverables: Attach one landscape-mode screen capture of the Historic Prices data and a second screen capture of the Historic Returns Histogram to your one-page report. Your one-page report should (1) identify the average monthly return over the selected period, (2) explain how the price range and the standard deviation can be a proxy for risk, (3) explain the trend in prices over the selected period, and (4) explain the difference between price return and total return.

Exhibit 4 from BPS (Assignment 4)

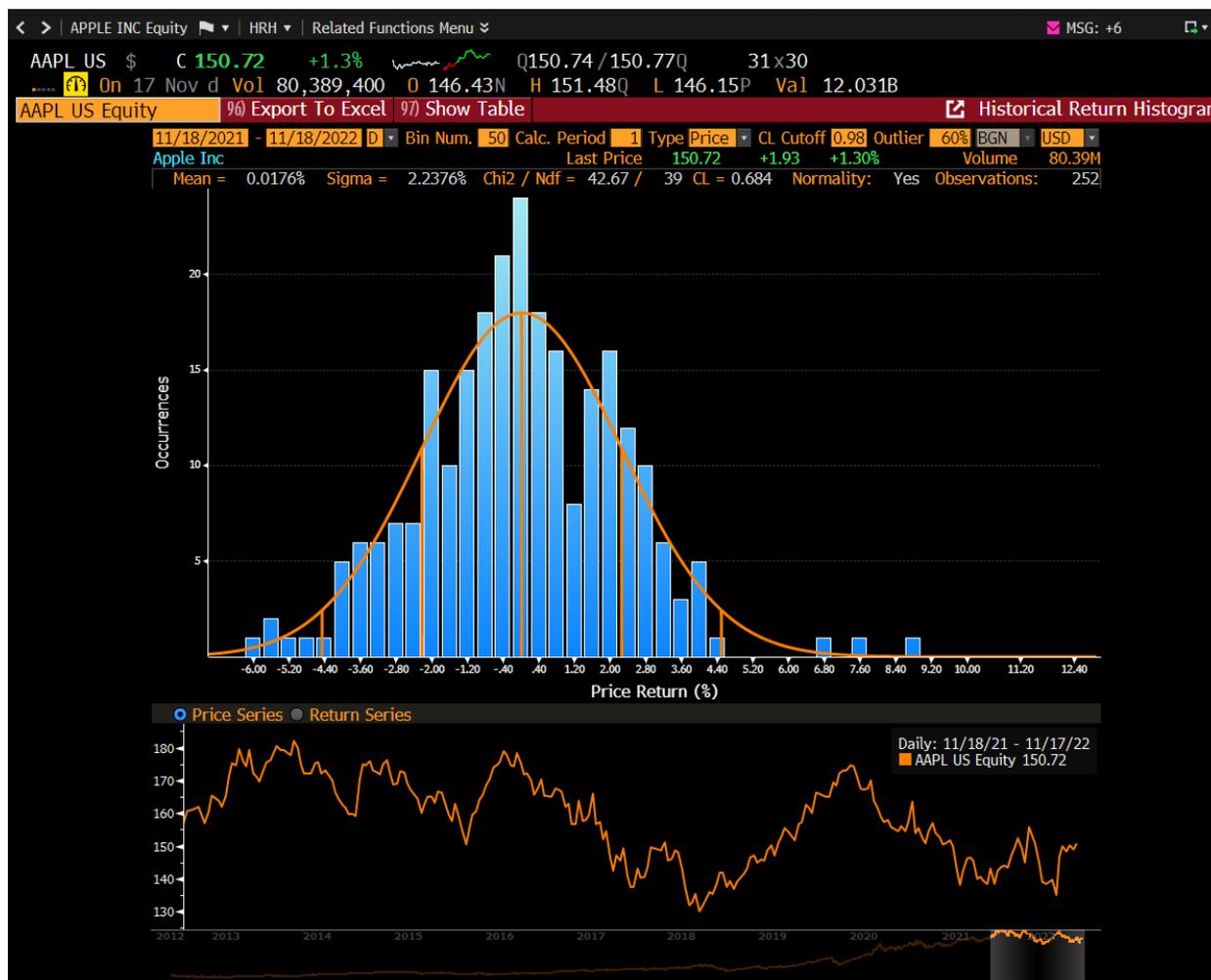
The screenshot displays the following information:

- Header:** < > | APPLE INC Equity | HP | Related Functions Menu
- Market Data:** AAPL US \$ C 150.72 +1.3% Q150.74 / 150.77Q 31x30
- Volume/Price:** On 17 Nov d Vol 80,389,400 O 146.43N H 151.48Q L 146.15P Val 12.031B
- Buttons:** AAPL US Equity, Export, Settings, Page
- Settings Panel:**
 - Apple Inc
 - Range: 12/31/2001 - 12/31/2021
 - Period: Yearly
 - Market: Last Price
 - Volume: Volume
 - Currency: USD
 - View: Price Table
 - High: 177.57 on 12/31/21
 - Low: .256 on 12/31/02
 - Average: 30.416, 7,506,666,667
 - Net Chg: 177.179, 45306.03%
- Price Table:**

Date	Last Price	Volume	Date	Last Price	Volume	Date
12/31/21	H 177.57	22,820,000,000	12/31/01	.391	1,690,000,000	
12/31/20	132.69	18,560,000,000				
12/31/19	73.413	7,090,000,000				
12/31/18	39.435	8,540,000,000				
12/29/17	42.308	6,810,000,000				
12/30/16	28.955	9,690,000,000				
12/31/15	26.315	13,070,000,000				
12/31/14	27.595	8,750,000,000				
12/31/13	20.036	3,660,000,000				
12/31/12	19.006	4,710,000,000				
12/30/11	14.464	4,430,000,000				
12/31/10	11.52	5,390,000,000				
12/31/09	7.526	5,120,000,000				
12/31/08	3.048	10,220,000,000				
12/31/07	7.074	8,840,000,000				
12/29/06	3.03	7,710,000,000				
12/30/05	2.568	5,710,000,000				
12/31/04	1.15	2,180,000,000				
12/31/03	.382	1,270,000,000				
12/31/02	L .256	1,380,000,000				

The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands

Exhibit 5 from BPS (Assignment 4)



ASSIGNMENT 5 (Economic Analysis): This assignment increases awareness of the many available economic indicators useful to both finance and economics majors. Steps for Completion: After logging in, type “ECOF” into the command bar and press enter to access the Economic data, Finder. Here, you will see a menu of several categories of economic information. Explore the various options available and obtain the University of Michigan survey 1yr ahead inflation expectations along with the most current Unemployment Rate from the Bureau of Labor Statistics. You can also use the mnemonic “ECST” to search for various World Economic Statistics. Deliverables: Attach a landscape-mode screen capture of the inflation expectations and a second screen capture of the unemployment rate to your one-page report. Your one-page report should (1)

The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands

identify the expected rate of inflation and describe how inflation expectations have changed over the past three years, (2) describe the relationship between education and the unemployment rate, (3) explain the concept of Leading, Coincident, and Lagging economic indicators, and (4) make a forward-looking inference about the state of the economy, citing specific information (obtained in your explorations) which supports your opinion.

Exhibit 6 from BPS (Assignment 5)

Key Indicators - United States		06/18/2022	11/18/2022			
Text	Ticker	Q4 2022	Q3 2022	Q2 2022		
		Oct	Aug	Jun		
National Accounts						
101 Real GDP (qoq %, saar)	ⓧGDP CQOQ I...		2.6	-0.6		
102 Real GDP (yoy %)	ⓧGDP CYOY I...		1.8	1.8		
103 Personal Consumption (qoq %, saar)	ⓧGDPCTOT% I...		1.4	2.0		
104 Private Investment (qoq %, saar)	ⓧGPDITOC% I...		-8.5	-14.1		
105 Gov't Spending (qoq %, saar)	ⓧGPGSTOC% I...		2.4	-1.6		
106 Change in Inventories (USD bn)	ⓧRGDCIPI I...		61.9	110.2		
107 Nominal GDP (USD bn)	ⓧGDP CUR\$ I...	25663.29		25248.48		
108 Nominal GDP (yoy %)	ⓧGDP CURY I...	9.0		9.6		
109 GDP Price Deflator (qoq %, saar)	ⓧGDP PIQQ I...	4.1		9.0		
110 Core PCE Deflator (qoq %, saar)	ⓧGDPCPEC I...	4.5		4.7		
Consumer Prices						
111 Consumer Price Index (yoy %)	ⓧCPI YOY In...	7.7	8.2	8.3	8.5	9.1
112 CPI ex-Food & Energy (yoy %)	ⓧCPI XYOY I...	6.3	6.6	6.3	5.9	5.9
113 PCE Price Index (yoy %)	ⓧPCE DEFY In...	--	6.2	6.2	6.4	7.0
114 Core PCE Index (yoy %)	ⓧPCE CYOY I...	--	5.146650	4.893450	4.672740	5.035410
115 Consumer Price Index (mom %)	ⓧCPI CHNG I...	0.4	0.4	0.1	-0.0	1.3
116 CPI ex-Food & Energy (mom %)	ⓧCPUPXCHG I...	0.3	0.6	0.6	0.3	0.7
Producer Prices						
117 PPI Final Demand (mom%, sa)	ⓧFDIDFDMO I...	0.2	0.2	-0.0	-0.4	0.9
118 PPI Final Demand ex Foods & Energy (mom%, sa)	ⓧFDIDSGMO I...	0.0	0.2	0.4	0.3	0.3
119 PPI Final Demand (yoy%)	ⓧFDIUFDYO I...	8.0	8.4	8.7	9.7	11.2
120 PPI Final Demand ex Foods & Energy (yoy%)	ⓧFDIUSGYO I...	6.7	7.1	7.2	7.6	8.3
Labor Market						
121 Unemployment Rate (%)	ⓧUSURTOT In...	3.7	3.5	3.7	3.5	3.6

ASSIGNMENT 6 (Industry Analysis): This assignment provides the components necessary for the second step in a three-step (Economic, Industry, Company) top-down fundamental analysis. Steps for Completion: After logging in, type “BI” into the command bar and press enter to view a list of ten Industries. Select the Health Care industry and then select the Medical Device sector. You will see various categories of information on the left side of the screen, and several key measures on

The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands

the right side of your screen. Explore the various options available. Deliverables: Attach a landscape-mode screen capture of the Medical Device sector home screen to your one-page report. Your one-page report should (1) identify 4 of the largest companies in this sector and their ESG (Environmental, Social, and Governance) rank, (2) highlight the average 1yr Total Return, forward P/E Ratio, and Dividend Yield for the sector, (3) explain how you might incorporate the ESG rank in the investment process, and (4) make an inference about the prospects for the Medical Device sector, citing specific information (obtained in your explorations) which supports your opinion.

Exhibit 7 from BPS (Assignment 6)

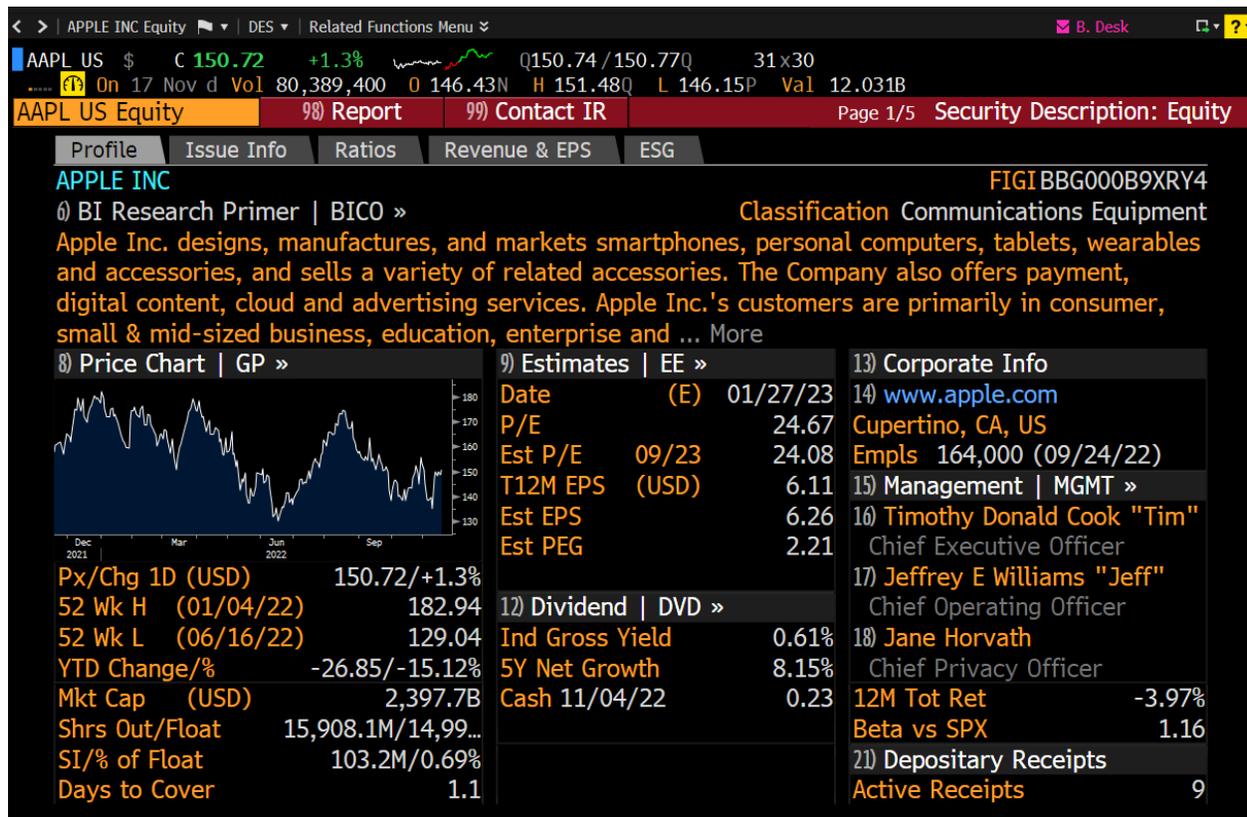
Medical Equipment & Devices Dashboard (BI MDEVG) Global		Key Indicators	Latest
Research		Industry Indicators	
Dashboard Ho...	Midyear Outlook: Global Medical Technology	31 US Unemploy...	4.00
Industry	THESIS: Medical technology companies are likely to cut guidance, particularly during the 2Q earnings season, in an attempt to hopefully "pull off the Band-Aid" and deal with concerns about dilutive earnings in one swing, we believe. While we expect markets to react negatively to any guidance cuts, the segment's 1H underperformance	32 US Personal In...	7.37
Equity		33 US Population ...	17.70
Credit		Operating Stats (Median)	
Government		34 Sales Growth Yoy...	16.84
Data Library		35 EBITDA Margin (%)	19.30
Market Share		36 Gross Margin (%)	68.38
Macro		Equity Valuation (Median)	
Industry	Featured Research	37 Est P/E Current Yr	22.21
Company	1) VIVA 2022 Roundup - Penumbra Shows Benefit of Indigo	38 EV/Est Sales Curr...	5.44
Analyzer	2) BI Focus: Renal Denervation Set for US Debut		
Valuation	3) TCT 2022 Roundup-Rivalries Sharpen as Markets Expand		
Credit	4) Wild Rides May Emerge If Medtech Estimates Shift		
GlobalData	Most Recent More >	Competitors	%YTDI
Contributors	5) Medtronic Looks to Uphold Momentum But Needs a Raise: 2Q Preview	11/17 51 Nuwellis Inc	-89.25
Monitor	6) False Start on Omnipod 5 Launch as Controller Melts: React	11/15 52 AtriCure Inc	-35.04
News/Research	7) Edwards' TAVR Aids Growth; Margin Can Sustain High R&D Spending	11/14 53 Medtronic PLC	-22.73
Events	8) Qiagen: Company Outlook	11/09 54 Integer Holdin...	-16.85
Comp Sheets	9) On-Med Trial Results Underwhelmed, But With Silver Linings	11/08 55 ABIOMED Inc	+4.93
Markets	10) Medtronic's Lackluster RDN Results May Not Delay Launch: React	11/08 56 Boston Scientif...	-0.66
	11) Shockwave's Beat-and-Raises Getting Smaller: Earnings Outlook		
	12) Abbott's Core Growth Needs Libre Back in International Markets		
	13) Abbott Laboratories: Company Outlook		
	14) Insulet's 3Q Shows It Now Has Competitive Lead: Earnings Outlook		
	15) Tandem Cuts Outlook as It Awaits Product Cycle: Earnings Outlook		
	16) Penumbra Shown in Positive Light by New Indigo Data at VIVA 2022		
	17) Congress Likely to Block 4.5% Cut to Medicare Physician Payments		
	18) J&J's Medical Devices a Weakling No More, May Reach 4-5% Pace		
	19) Abiomed: Company Outlook		
	20) Hologic: Company Outlook		
	21) Medtronic's Pressure Eased by \$3 Billion Product Cycle: BI Focus		
	22) Medtronic Trades at Discount to Peers Despite Pipeline Progress		
	23) Dexcom 3Q Beat Reassuring After 2Q Miss: Earnings Outlook		
	24) Edwards' Hospital, FX Headwinds Hit Guidance: Earnings Outlook		
	25) Click to see more research...		

ASSIGNMENT 7 (Company Analysis): This assignment initiates company analysis by familiarizing students with the who (Management), the what (Product segmentation), and the where (Geographic Segmentation) of the company. Steps for Completion: Once the home page for

The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands

a company has been accessed, type “DES” into the command bar and press enter to view a broad company description. Then, type “FA” into the command bar and press enter to review the many options available for analysis including the Segments tab for revenue by region and revenue by line of business. Then, type “MGMT” into the command bar to explore company management. Deliverables: Using information for the most recent year, your one-page report should (1) highlight the proportion of revenue derived in the U.S., (2) highlight the proportion of revenue derived from Non-Alcoholic Beverages, and (3) identify the CEO and CFO, with information about their age and their tenure in that position.

Exhibit 8 from BPS (Assignment 7)



**The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands**

Exhibit 9 from BPS (Assignment 7)



ASSIGNMENT 8 (Fixed Income): This assignment is a quick introduction to the U.S. Treasury Securities market. Steps for Completion: Access the Bloomberg Treasury and Money Markets home page by typing “BTMM” into the command bar and pressing enter. Note that you can position your mouse pointer over the top of each figure on the screen and a small window will pop up with an explanation. Explore the various options available. Deliverables: Attach a single landscape-mode screen capture of the home page to your one-page report. Your one-page report should (1) highlight the yield on 6-month maturity T-Bills and 180-day maturity Commercial Paper and explain the yield differential, (2) highlight the yield on 1-year T-Bills and 30-year T-Bonds and again explain the yield differential.

The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands

Exhibit 10 from BPS (Assignment 8)

The screenshot displays a financial data terminal interface for the United States of America. The top navigation bar includes 'APPLE INC Equity', 'BTMM', and 'Related Functions Menu'. The main content is divided into several sections:

- United States of America** (selected): Shows various interest rates and market indices.

Fed Funds FOMC »	Fed 0/N Repo	US T-Bill	USD Deposit Rates	Rev Repo (Bid/Ask)
FFDF 3.8200 3.8500	SOFR 3.81	4W 3.63 -0.03 3.72 3.57	O/N 3.8000 3.9500	O/N 3.84 3.80
OBFR01 3.82	TGCR 3.77	2M 3.90 -0.06 3.97 3.82	1W 3.8100 3.9600	1W 3.84 3.80
Commercial Paper	BGCR 3.77	3M 4.18 -0.02 4.18 4.08	2W 3.8200 3.9700	2W 3.84 3.80
30D 3.880	AFX 0/N Rate	6M 4.54 -0.04 4.46 4.38	1M 3.9900 4.1400	1M 3.84 3.80
90D 4.510	AMERIBOR 3.99	1Y 4.62 -0.04 4.50 4.41		
- Dow Jones**: DJIA 33546.32 -7.51
- S&P 500 E-Mini Future**: SPX Fut 3951.75 -3.50
- NASDAQ Composite Index**: CCMP 11144.96 -38.70
- CRB Commodity Index**: CRB 277.60 -5.18
- US Bonds | FIT »**: Shows yields for various maturities (e.g., T 4 3/8 10/31/24 4.446).
- Spot FX | FXC »**: Shows exchange rates for JPY (139.8200), EUR (1.0368), GBP (1.1895), and CAD (1.3321).
- Key Rates**: Prime 7.00, BLR 5.75, FDTR 4.00, Discount 4.00.
- SOFR OIS Swaps**: 3Y 4.0527, 5Y 3.6718, 10Y 3.4425, 30Y 3.1381.
- 10Y Note Future**: CBT 112-23 +03
- Commodities**: NYM WTI 82.24 +0.60, GOLD 1764.45 +4.01.
- Funds Future**: NOV 95.640
- Fed Repo**: G/C ON 3.81
- 30Y MBS | BBTM »**: FNCL 5 98-29+ 98-31 +00, G2SF 5 99-10 99-12 +00, Current Coupon 5.281.
- Economic Releases | ECO »**: A table listing events with Date, Time, Country, and Event details.

Date	Time	C	A	M	R	Event	Period	Surv(M)	Actual	Prior	Revised
11/18	23:00	US	↓	↓	↓	Existing Home Sales	Oct	4.4m	--	4.71m	--
11/18	23:00	US	↓	↓	↓	Existing Home Sales MoM	Oct	-6.6%	--	-1.5%	--
11/18	23:00	US	↓	↓	↓	Leading Index	Oct	-0.4%	--	-0.4%	--
11/21	21:30	US	↓	↓	↓	Chicago Fed Nat Activity Index	Oct	--	--	0.1	--
11/22	23:00	US	↓	↓	↓	Richmond Fed Manufact. Index	Nov	-6	--	-10	--
11/23	20:00	US	↓	↓	↓	MBA Mortgage Applications	Nov 18	--	--	2.7%	--
11/23	21:30	US	↓	↓	↓	Durable Goods Orders	Oct P	0.3%	--	0.4%	--
11/23	21:30	US	↓	↓	↓	Durables Ex Transportation	Oct P	0.1%	--	-0.5%	--
11/23	21:30	US	↓	↓	↓	Cap Goods Orders Nondef Ex Air	Oct P	-0.2%	--	-0.4%	--
11/23	21:30	US	↓	↓	↓	Cap Goods Ship Nondef Ex Air	Oct P	--	--	-0.5%	--
11/23	21:30	US	↓	↓	↓	Initial Jobless Claims	Nov 19	--	--	222k	--
11/23	21:30	US	↓	↓	↓	Continuing Claims	Nov 12	--	--	1507k	--
11/23	22:45	US	↓	↓	↓	S&P Global US Manufacturing PMI	Nov P	50.0	--	50.4	--

ASSIGNMENT 9 (Foreign Exchange): This assignment is a quick introduction to spot and forward foreign currency markets. Steps for Completion: Access the Currency rates Matrix by typing “FXC” into the command bar and pressing enter. You will see the major currencies in a heat map view, with currencies trading higher in green and currencies trading lower in red. Explore the various options available, and then type “WBG” into the command bar and press enter to obtain the price of the Big Mac sandwich in various countries. Deliverables: Attach a single landscape-mode screen capture of the spot currency data to your one-page report. Your one-page report should (1) highlight the spot U.S.\$ value of 1 EUR and the price from exactly 1 year ago, (2) highlight the range (high and low) of prices for the EUR over the last 15 years, and (3) explain the Big Mac Index and its possible relevance to the foreign currency markets.

**The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands**

Exhibit 11 from BPS (Assignment 9)

The screenshot displays a Bloomberg terminal window with the following settings: Basket: Majors, Source: BGN, Rate: Spot, Date: 11/18/22, Heat Map: checked. The main display is a Currency Rates Matrix showing exchange rates for 12 major currencies: USD, EUR, JPY, GBP, CHF, CAD, AUD, NZD, HKD, NOK, and SEK. The matrix is a 12x12 grid where the diagonal is 1.0000. Values are color-coded: green for positive changes and red for negative changes. Below the matrix is a legend for '% Change on Day Range' with categories: Below -2.5% (red), -0.5% to -2.5% (dark red), -0.05% to -0.05% (light red), -0.05% to 0.05% (white), 0.05% to 0.5% (light green), 0.5% to 2.5% (medium green), and Above 2.5% (dark green). A note at the bottom states: 'Rates are from Composite where Bloomberg BGN is not available.'

	USD	EUR	JPY	GBP	CHF	CAD	AUD	NZD	HKD	NOK	SEK
SEK	10.601	10.992	.07581	12.610	11.132	7.9574	7.1076	6.5307	1.3552	1.0476	
NOK	10.119	10.492	.07237	12.037	10.626	7.5958	6.7846	6.2340	1.2936		.95456
HKD	7.8228	8.1109	.05594	9.3051	8.2147	5.8719	5.2448	4.8192		.77305	.73792
NZD	1.6233	1.6830	.01161	1.9308	1.7046	1.2185	1.0883		.20750	.16041	.15312
AUD	1.4915	1.5465	.01067	1.7741	1.5663	1.1196		.91884	.19066	.14739	.14069
CAD	1.3322	1.3813	.00953	1.5847	1.3990		.89321	.82071	.17030	.13165	.12567
CHF	.95229	.98736	.00681	1.1327		.71480	.63847	.58665	.12173	.09410	.08983
GBP	.84070	.87166	.00601		.88282	.63105	.56365	.51791	.10747	.08308	.07930
JPY	139.83	144.98		166.33	146.84	104.96	93.752	86.143	17.875	13.818	13.190
EUR	.96448		.00690	1.1472	1.0128	.72396	.64664	.59416	.12329	.09531	.09098
USD		1.0368	.00715	1.1895	1.0501	.75062	.67045	.61604	.12783	.09882	.09433

ASSIGNMENT 10 (Equity Screening): This assignment allows students to screen for companies which meet specified criteria. Steps for Completion: Type “EQS” into the command bar and press enter. You will see broad categories available for screening and you can also add other criteria and Boolean operators. Explore the various options available. Deliverables: Use appropriate criteria to narrow the number of companies to fewer than 20. Attach a single landscape-mode screen capture of your screening criteria and a second single landscape-mode screen capture of the resulting companies to your one-page report. Your one-page report should (1) indicate your rationale for choosing each of the screening criteria, and (2) identify just one company (from your results) which you would consider for additional analysis and your rationale for selecting that company. course and most of the students who complete the first course also enroll in the second.

**The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands**

Exhibit 12 from BPS (Assignment 10)

The screenshot displays the Bloomberg Terminal Equity Screener interface. The top navigation bar includes 'APPLE INC Equity', 'EQS', and 'Related Functions Menu'. The main area is divided into three sections:

- My Recent Screens:** A list of 20 screens, including 'Last Unsaved Screen', 'MSCIExUSAPharma', 'US Tech Neg', 'ASX', 'NASDAQ', 'india', 'FT1 Prtbx', 'SPEBITDA', 'Chemicals', 'for alvaro', and 'All Saved Screens'.
- Popular Screens:** A list of 10 screens, including 'BI Factor Rankings', 'China VIE Compani...', 'Russia ADR's', 'Russia Inc or Dom...', 'Russia Revenue Co...', 'Activism Screen', 'High CDS Spreads', 'Insider Buyers', 'News Sentiment', and 'SZSE SEHK Northbou...'.
- Screening Criteria:** A table with columns for 'Selected Screening Criteria' and 'Matches'. The criteria include:

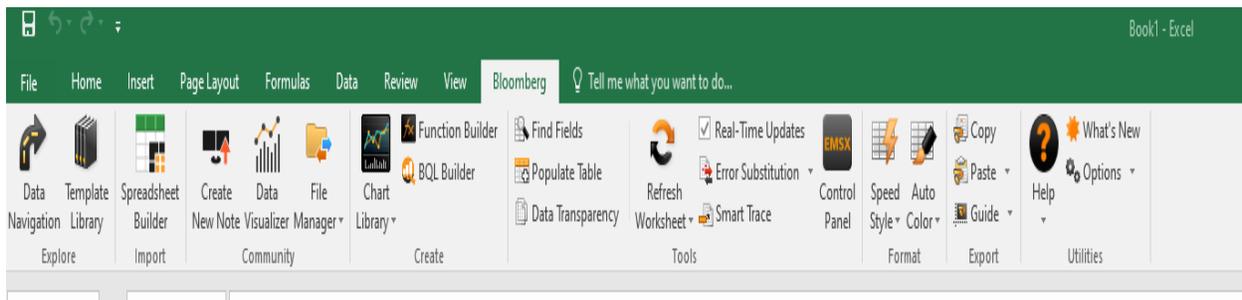
Selected Screening Criteria	Matches
Security Universe	1615280
51 :: Trading Status: Active	527433
52 :: Security Attributes: Show Primary Security of company only	94800
53 :: Country or Territory of Domicile: United States	14809
54 :: Sectors (BICS): Financials	2118
55 :: Current Market Cap >= 100000M	10
56 Add screening criteria	

Equity Valuation

Using the BPS, the students can review theoretical concepts, and they can also simulate managing a security portfolio. A major component of this aspect is the application of the students' familiarity with BPS to the many valuation models that are traditionally covered in Investments courses. After students learn several valuation models, they build a reusable Excel template which assists in the valuation process. There are a few interesting dimensions to this template. First, it uses the Bloomberg Excel add-in to access data from Bloomberg. Second, it is reusable, and changing the ticker symbol changes the data underlying the valuation models. Finally, the template is flexible. Some inputs can be changed to tailor the results to a specific situation or as part of a scenario analysis. The special features of the Bloomberg Excel add-in are presented in the following Exhibit.

**The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands**

Exhibit 13 from BPS (Bloomberg Excel add-in)



This add-in can access data from BPS and place it in an Excel worksheet to later facilitate analysis. A variety of “wizards” and “drag and drop” capabilities facilitate data extraction. Alternately, you could use the BDP (Bloomberg Data Point), BDH (Bloomberg Data History), and the BDS (Bloomberg Data Set) formulae depending on the type of data to be extracted. The BDP formula is useful in obtaining a single data point; the BDH formula is useful in obtaining historic data for a selected timeframe, and the BDS formula is useful in obtaining multi cell data sets. The valuation exercise results in the creation of an Excel workbook comprising multiple worksheets.

Through BDH a company being identified can be analyzed, and a few competing peer-companies can be compared to it. The analysis can produce results of the six valuation models:

1.Dividend Growth 2.Market Multiples 3.Holding Period Return, 4.Enterprise Value, 5. Residual Income, and 5. Free Cash Flow.

After all models have been completed, the summarized valuations available in the Input and Output worksheet can be examined. That should generate a discussion about the range of values obtained. That is a good opportunity for the instructor to discuss the probabilistic rather than deterministic nature of the valuation exercise and the importance of the assumptions underlying each of the models. This is also a good opportunity to discuss the concepts of intrinsic value and market price. At this point, students are encouraged to calculate a weighted average of the six estimates by assigning weights to each estimate based on company specific factors (for example, a company with an extremely low or extremely high dividend payout ratio should use a lower weight for the Dividend Growth model). Alternatively, it could be asked to the students to consider taking a simple average of the estimates after eliminating the extreme estimates. This estimate of the stock’s

**The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands**

intrinsic value is then compared to the actual stock price, and this represents an opportunity for the instructor to reinforce the concept of market efficiency. This valuation exercise is also a good opportunity to engage in “what if” scenario analysis to determine the robustness of the estimates to changes in underlying assumptions. In short, the goal here is to experiment with the model inputs, test the strengths and weaknesses of each model and examine the drivers of a stock price to better comprehend market movements.

In a more advanced course, students evaluate equity securities using a top-down approach by integrating and organizing information. Students can examine economic data to make a judgment about where our economy is currently in regard to the business cycle. Then, students could examine sectors and similarly formulate a position about its prospects. Finally, students could study individual companies. This starts with reading a firm’s 10-k statements, analyzing firm ratios against its peers, perusing earnings reports and the like. The Excel pricing models developed in conjunction with the BPS system is the main quantitative tool students use to determine relative stock value pricing. The students could attempt to relate the qualitative findings with the qualitative results from the pricing models. Finally, a stock report can be prepared integrating all the new knowledge and a “stock report presentation could be performed. The presentation concludes with a recommendation about taking a position in the examined security. At this time, the instructor could be able to evaluate students’ growth in financial concepts. Similarly, other students could also be enabled to evaluate their peers and offer suggestions for improvement. The students at this point could conclude the cognitive process and could thus be able to appropriately recommend a holding position. It must be noted that the process is remarkably like the one used by professional stock analysts and the results achieved by the students are often better than those used by the professional stock analysts.

Concluding Remarks

The primary purpose of this presentation was to demonstrate the integration of relevant industry-standard technology (BPS) in the curriculum. We do not address peripheral issues, viz (1) the merits of active versus passive portfolio management, (2) the relative merits of the specific valuation models, and (3) the validity of the assumptions used in the valuation models. While we have used the Bloomberg terminals, other information providers (for example, Thomson Reuters,

**The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands**

Factset, Morningstar, S&P Capital IQ) also provide information which can be used to integrate relevant technology in the curriculum. Integration of BPS into the curriculum can be vastly facilitated by the purchase of terminals on the part of a business school.

A few conclusive remarks were offered by Quintana Meza (2022):

-students considered important the use of the terminal as an analysis tool and research and consider it very important for decision-making of business decisions. This matches what was pointed out by Sharma (2015), who mentioned that Bloomberg provides the student with an environment that allows you to appreciate the real world of finance and, therefore, facilitates decision making.

-Most students indicated that the main Bloomberg's advantage is that it has data national and international, which would allow contrasting theory with practice. The students agreed that the use of Bloomberg favors their learning. Likewise. If they had not carried out operations in the terminal, they would have learned less.

References

- Bloom, B., Englehart, M. Furst, E., Hill, W., & Krathwohl, D. (1956). Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain. New York, Toronto: Longmans, Green.
- Coe, T. (2007). Using the Bloomberg Professional System for Finance Classes. *Journal of Financial Education*, 33, 48-62.
- Duggal, R. (2006). The Costs and Benefits of a Finance Lab. *Journal of College Teaching and Learning*, 3(11), 81-83. <https://doi.org/10.19030/tlc.v3i11.1662>
- Hawtrej, K. (2007). Using Experiential Learning Techniques. *Journal of Economic Education* 38(2), 143-152.
- Kish, R. & Hogan, K. (2012). Building a Financial Trading Lab: Step 1 and beyond. *Journal of Financial Education* 38, 13-33.
- Mallett, J. Belcher, L. & Boyd, G.M. (2010). Experiment No More: The Long-Term Effectiveness of a Student-Managed Investments Program. *Journal of Financial Education*, 36, 1-15.

**The International Congress of Educational Sciences and Linguists (ICEL 2022)
29-30 November 2022, The Netherlands**

- Payne, J. & Tanner, G. (2011). Experiential Learning and Finance: A Hands-on Approach to Financial Modeling. *Journal of Financial Education*, 37, 82-100.
- Pfeffer, J. & Fong, C.T. (2002). The End of Business Schools? Less Success Than Meets the Eye. *Academy of Management Learning & Education* 1, 78-95.
- Quintana Meza, A.A.M 2015-04 to 2016-12 |Pontificia Universidad Católica del Perú (Lima, Lima, PE) URL: <http://files.pucp.edu.pe/profesor/2018/06/27153033/Cuadernos-de-Innovacion-en-la-Docencia-Universitaria-2018.pdf>
- Schadler, F. (2007). A Pedagogy that Elevates the Learning of Introductory Investments. *Journal of Financial Education*, 33, 49-63.
- Sharma, C. (2015). Use of Bloomberg Professional in Support of Finance and Economics Teaching. *Journal Cogent Economics and Finance*, (3). <https://doi.org/10.1080/23322039.2015.1115618>
- Scott, R. (2010). Bloomberg 101. *Journal of Financial Education*, 36, 80-88.