Integrating Excel, SQL, and SPSS within an Introductory Finance Intrinsic Value Assignment

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ABSTRACT

In 2013, the Association to Advance Collegiate Schools of Business (AACSB) issued revised accreditation standards to address a "new era" of business education. The standards recognize that students will be entering a data-driven world and need skills in information technology to analyze and manage data. Employer surveys also emphasize the importance of technological skills and knowledge in a rapidly changing environment. To address these challenges, business faculty in all disciplines must adapt course content to incorporate software tools and statistical applications and integrate active learning tools that provide students with hands-on experience.

This paper describes a technology-based, business valuation assignment instructors can employ within an undergraduate managerial finance course. The assignment draws upon historical financial data from the restaurant industry as students predict the intrinsic value of a firm through the application of various software products. Students receive data in an Access database and create SQL queries to determine free cash flows before transferring information into Excel for further analysis. Students continue by uploading key data elements into SPSS and performing statistical analysis on three growth models in order to identify a desired predictor of intrinsic value. The assignment develops students' abilities to navigate software tools, understand statistical concepts, and apply quantitative decision making.

Key Words: Business valuation, growth rates, software tools

INTRODUCTION AND LITERATURE REVIEW

The growth in data has been occurring at an accelerating pace for many years in tandem with the evolution of computerization. The massive body of structured and unstructured data is now labelled as Big Data, for it represents a specific and significant factor affecting a wide range of business decisions. Hassani and Silva (2015) characterize Big Data as a "revolutionary development" that stands at the forefront of organizational success. In this environment, "it is data and analysis not experience and intuition that are the bases for decision-making" (Ke & Shi, 2014). As a result, organizations continue to seek out new tools for the manipulation and analysis of data (Varian, 2014).

Technological developments carry implications for business professionals and, therefore, for business schools. Bodies such as the Secretary of Education's Commission on the Future of Higher Education (U.S. Department of Education, 2005) and the Association of American Colleges and Universities (AACU, 2008) have called on higher education institutions to be accountable for the development of workforce skills that allow graduates to succeed. The Association to Advance Collegiate Schools of Business (AACSB) updated its accreditation standards in 2013 because of the "new era" of business education and recognized the importance of knowledge regarding statistics and quantitative reasoning (AACSB, 2013). Graduates need skills in those areas due to their impact on business practices tied to data analysis and data management. The market has a clear need for quantitatively trained graduates who are skilled in data analysis (Gel, O'Hara Hines, Chen, Noguchi, & Schoner, 2014; Smith & Martinez-Moyano, 2012). However, market studies identify a shortage of talent regarding statistics, digital technologies, and data mining and analysis as well as employer concerns over gaps in the skillsets (Manyika et al., 2011; PwC, 2015). Hassani and Silva (2015) challenged higher education with the "necessity and responsibility" to equip students with these skills.

Business schools need to determine whether their faculty are adequately prepared and willing to embrace technology and incorporate software tools into the classroom. In 2014, an EDUCAUSE survey reported that 55% of faculty remained skeptical of technological applications in the classroom and 78% of faculty lacked the skills necessary to teach with technology (Grajek, 2014). Most instructors teach introductory finance courses as a string of "unlinked" financial concepts (Tant, Watson, & Lambert, 2007). A survey of finance courses by Lai, Kwan, Kadir, Abdullah, and Yap (2010) found the dominant teaching method to be chalk-and-talk lectures, which was consistent with earlier studies (Baker & Post, 2006; Hamilton & Saunders, 2009).

To improve technology-related business education, researchers highlight two primary aspects. First, to develop knowledge surrounding technology, students must encounter technology in the classroom. Second, an active, real-world approach enhances the effectiveness of the learning process. Inclusion of technology can take many forms. Faculty will often expose students to spreadsheet software such as Excel, which has widespread usage in business (Balik, 2009). Kadijevich (2012) regards spreadsheet software as a "powerful decision support system." Working with this software improves student learning, enables problem solving, encourages future preference for its use, and improves students' technical abilities (Cauley, Aiken, & Whitney, 2010; Kyng, Tickle, & Wood, 2013). Kyng, Tickle, and Wood (2013) also highlight numerous other statistical, mathematical, and econometric software products instructors incorporate for more advanced problem solving and data analysis and because of industry relevance. The growth in databases has led to an increased reliance on structured query language

(SQL) to access and manipulate data. Working with SQL provides students an opportunity to develop programming skills, an important element in technology education (Wright, Rich, & Leatham, 2012). Seltzer (2008) defined SQL as the "lingua franca for data access," and Siepermann, Lackes, and Börgermann (2014) identified SQL as the number one database language. Shein (2014) stressed that programming through tools such as SQL represents an essential skill that supports the development of problem-solving skills in computer science. In addition, employers view knowledge of statistics and the ability to use statistical applications as core business skills that support more sophisticated analyses (Levine & Stephan, 2011). Gel, O'Hara Hines, Chen, Noguchi, and Schoner (2014) place statistical analysis at the center of most quantitative areas and view it an interdisciplinary skill. In summary, faculty can employ a wide range of technologies to build student awareness of available resources and develop skills in the application of the tools.

In addition to selecting appropriate software for classroom learning, faculty must determine how to use the software in an effective manner. Many studies have emphasized the benefits of incorporating real-world data and hands-on projects into software training (Arumugam, 2014; Chen, Chiang, & Storey, 2012; Chen & Jassim, 2013; Ricks & Wiley, 2014). Smith and Martinez-Moyano (2012) highlighted the benefits of experiential learning in teaching statistics. Use of real-world data can aid in overcoming unfamiliarity with data analysis tools, reducing the anxiety of working with statistical software, and demonstrating the value of the technology. Neumann, Hood, and Neumann (2013) suggest that the data's use in statistics education can sharpen students' statistical knowledge and reasoning skills. The authors found that faculty view data sets as an excellent way "to illustrate different research approaches, methods of data analysis, and applications of statistical theory to solve real-life problems." Real-world data, they posit, allows faculty to demonstrate both how and why one analyzes data.

Faculty can creatively incorporate statistics into introductory coursework to bring together multiple disciplines (Gel, Hines, Chen, Noguchi, & Schoner, 2014) and to help students think about data in new ways. As an example, business valuation frequently represents the culminating topic in the undergraduate financial principles course. By learning the foundational steps of business valuation through various statistical techniques, students enhance their ability to tell a firm's story (Noyes, 2015). However, faculty members face a challenge in teaching students about intrinsic value from a non-theoretical perspective (Chen & Jassim, 2013). This paper addresses the challenge by presenting a business valuation project based on historical data for a set of firms in the restaurant industry. The project provides introductory finance students with practice on how to apply software tools, statistical concepts, and data coding in a real-world setting. Instructors lead students through a number of statistical-based calculations and guide them in interpreting the results as a way to build their comprehension of growth rate trends and the intrinsic value of a firm.

ASSIGNMENT BACKGROUND

For a variety of compelling reasons, instructors might assign a project related to business valuation toward the end of a finance principles course. First, instructors will likely have covered regression analysis within the risk/return section of the course and can comfortably incorporate regression tools within a semester-end project. Second, through prerequisite coursework in accounting and foundational chapters within a standard finance textbook, students will have gained at least limited competence in conducting financial statement and ratio analyses. Finance instructors can enhance this competence by incorporating industry data into a project. Third, the calculation of intrinsic value draws on a number of components including the determination of free cash flows, applying an appropriate weighted average cost of capital (WACC), and performing statistical analysis. A culminating project brings these tools together in a single, unifying assignment.

A carefully designed project can allow undergraduate business students to understand:

1. The difference between free cash flow to the firm (FCFF), free cash flow to equity (FCFE), and free cash flow to the firm (FCFF) and the significance of the constructs to business valuation models.
2. The importance of growth rates as a key variable within the business valuation model. Regrettably, many introductory texts do not focus on the importance of growth rates. Graham and Dodd (2009) recognize the difficulty in estimating growth rates; still, as Damodaran (2012) suggests, most present value-based business valuation models are prone to error based on uncertain growth rates. Students are often led to believe that there is a single growth rate for modeling purposes. In reality, analysts may use forecasted percentage changes in variable such as revenue, EBITDA, EBIT, or net income as the basis for growth rates. Often, analysts will report multiple growth rates. For the project described below, students calculate growth rates using three different models and select a rate they consider to be appropriate.

Kroes, Chen, and Mangiameli (2013) have identified several technology-driven employer expectations for business graduates. These include an understanding of data manipulation tools, the capability to develop spreadsheet formulas, recognition of advanced data analysis features such as regression and correlation, and the ability to create graphs and tables. The assignment that follows ("Assignment") incorporates many of these features and makes extensive use of software tools for evaluation of a business valuation model. The instructor provides financial information to students via an Access database. Students apply SQL coding to derive free cash flows and financial statement variables. SQL coding techniques emphasize how firm-specific variables impact the primary inputs within a business valuation model. Students then transfer statistical results to Excel for analysis and the development of tables and graphs. Students also input the results into SPSS for statistical analysis and determination of growth rates based on three models. Finally, students employ forecasting techniques such as single and double exponential smoothing to calculate a firm's valuation based on variability in growth rates and free cash flow calculations. The Assignment also challenges students to consider a series of questions designed to enhance their understanding of the concepts explored. Given the length of the Assignment, the authors recommend that students be divided into 2-3 person teams. A copy of the Access database with complete SQL queries can be obtained from the corresponding author.

According to principle textbooks (e.g., Brigham and Houston), the standard way to calculate intrinsic value hinges on the following equation:

$$Value_0 = \frac{FCF_0(1+g)}{WACC - g} = \frac{FCF_1}{WACC - g}$$

Where

1. $Value_0$ = Value of the firm in the current year
2. FCF_0 = Free cash flow in the current year
3. FCF_1 = Free cash flow in next year

4. g = a growth rate (e.g., forecasted percentage change in an income statement variable)
5. WACC = the weighted average cost of capital which reflects the riskiness of the asset.

Throughout the introductory course, students learn how to calculate free cash flow from the financial statements and become exposed to the definition of WACC and growth rates. Analysts have no consensus as to how to calculate growth rates (Damodaran, 2012). A variety of modeling techniques (e.g., arithmetic means, exponential smoothing models) and financial statement variables (e.g., revenue growth, earnings growth) can be used to forecast growth rates.

In the Assignment, student teams leverage technology and their understanding of financial statements to:

1. Calculate free cash flows using ten years of financial statement data (2004-2013) via SQL coding. Via the Assignment, students will learn about the differences in free cash flow to equity (FCFE) and free cash flow to the firm (FCFF).
2. Calculate arithmetic and geometric averages for financial statement variables and growth rates using 2004-2013 data.
3. Forecast an appropriate prediction for a growth rate using SPSS and ten years of historic financial data as a guide. Growth rates can be generated via changes in revenue, EBIT, EBITDA, net income, or other appropriate measures of income. Students will learn how to calculate and interpret moving average (MA) models, single exponential smoothing models, and double exponential smoothing models.
4. Solve for the 2014 value of the firm. The instructor will provide students with the WACC for their firm.

THE ASSIGNMENT

The instructor points students to an Access database containing financial statement information necessary for calculating free cash flows and growth rates for 25 firms in the restaurant industry. Each student (or student group) will explore one of the firms. The database contains the ticker symbol for each company and the following financial statement items from 10K reports (2004-2013):

1. Cash
2. Accounts receivable
3. Inventory
4. Accounts payable
5. Accruals
6. Net income
7. Net property plant and equipment
8. Long-term debt
9. EBIT
10. EBITDA
11. Revenue
12. Tax rate

The instructor should direct students to perform the following tasks for their assigned company. (The Figures provide an example from a student’s sample work.)

Step 1: Free Cash Flows

Brigham and Houston (2014) define free cash flow as "the amount of cash that could be withdrawn without harming a firm's ability to operate and to produce future cash flows." This measures a firm's value as part of the numerator of the valuation formula. Within the Access database, students create SQL queries in the database to derive FCF for each of the past ten years for their firm. Students import FCF for their firm into Excel and calculate the percentage change in FCF.

FCFE measures how much cash can be paid to equity shareholders after all expenses, reinvestment and debt is repaid. Students also create SQL queries to derive FCFE for each of the past ten years for their firm (see Figure 1, Appendix). Students import FCFE for their firm into Excel and calculate the percentage change in FCFE.

Students can easily confuse FCFF and FCFE. FCFF represents the dollar value generated for a firm once other expenses are paid; thus, it is the total dollar value generated for stockholders and bondholders. FCFE represents the dollar value left over for shareholders after the firm subtracts debt payments and capital expenses from net income. FCFF measures the net cash generated for the firm. Consistent with the first two cash flows, students create SQL queries to derive FCFF for each of the past ten years, import FCFF for their firm into Excel, and calculate the percentage change in FCFF.

Step 2: Revenue, EBITDA, EBIT, and Net Income (Growth Rates)

Within the Access database, students create SQL queries to isolate or calculate revenues, EBITDA, EBIT, and Net Income for each of the past ten years (see Figure 2, Appendix). Students import each financial statement item for their firm into Excel and calculate the respective percentage changes, arithmetic mean, and geometric mean.

Students also compute the arithmetic mean and geometric means for all free cash flow calculations (see Figure 3, Appendix). Note that if any financial statement variable is negative in the beginning year (e.g., 2005), students are unable to calculate a geometric mean.

Step 3: Growth Rates using Moving Averages and Smoothing Models

Students import FCF, FCFE, FCFF, Revenues, EBITDA, EBIT, and Net Income and all yearly percentage changes from the Access database into SPSS. They then remove the most recent (2013) percentage change derived for their firm and perform a statistical analysis of the three cash flow variables and the four potential drivers of growth rates. Students use the variables to forecast the firm's growth rate using the following models:

1. Moving average (three years)
2. Single exponential smoothing
3. Double exponential smoothing

For analytical purposes, students generate three tables (one for each model) and identify the actual 2013 growth rate, the predicted 2013 growth rate, the confidence interval range for the forecasted growth rates (i.e., lower and upper bound), the smoothing constants (e.g., α, γ, where appropriate) and the following error terms: mean average percentage error ("MAPE"), mean absolute deviation ("MAD"), and mean standard deviation ("MSD"). See example in Figure 4 (Appendix). SPSS generates the error terms. Students will select the growth model that provides the best growth rate forecast, i.e., the model with the lowest error in prediction (Hanke & Wichern, 2009), and use the model for the final step.

Step 4: Business Valuation

Using the instructor-provided WACC for their firm and the growth model selected above, students calculate the value of the firm in 2014 and compare it to the actual value of the firm supplied by the instructor. In this student example, FCFE and revenues were the determinants for the valuation (see Figures 5 and 6, Appendix).

Using a forecasted FCFE of $3,357.22 and revenue growth rate of 5.04%, the predicted business valuation (in thousands) in this example for 2014 was $329,572:

$$Value_{2014} = \frac{FCF_{2014}(1+g)}{WACC - g} = \frac{\$3{,}357.22(1+0.0504)}{0.0611 - 0.0504} = \$329{,}572.33$$

This valuation compared to an actual valuation (in thousands) for 2014 of $397,585.

ADDITIONAL QUESTIONS

Students also respond to various questions designed to enhance their comprehension of utilizing statistical models to understand growth rate trends. The number and sophistication of the questions will vary from instructor to instructor based on time constraints, course emphasis, and student ability. The questions explore differences between actual and predicted valuations and the changes resulting from the use of different variables or growth rate models. A list of recommended questions and sample student responses is available from the corresponding author.

STUDENT RESULTS

Twenty five students completed the assignment in an introductory financial management course. All of the students were able to successfully apply the software tools to compile financial information and perform a statistical analysis using a selected growth model. Sixteen students applied the single exponential smoothing growth model and nine students applied the moving average model. The predicted business valuations had varying degrees of accuracy, and the results were affected by factors such as the size and stability of the firms. Student predictions were a mix of under and overestimations of the actual valuations for the firms. As expected, the students raised a variety of questions with the instructor regarding application of the software and the interpretation of the results. As desired, the students remained actively engaged throughout each step of the assignment.

CONCLUSION

Students need to develop technological skills and knowledge in order to succeed in a data-driven world. The business valuation assignment presented here provides two primary benefits. First, the assignment gives students an opportunity to utilize a number of software tools and statistical applications in predicting a firm's intrinsic valuation. Second, the use of real world data from the restaurant industry offers a practical way for students to apply financial and statistical concepts in an engaging manner. Use of the assignment near the end of an introductory financial management course allows instructors to reinforce previous financial concepts, sharpen students' analytical skills, and develop their knowledge of growth rates and intrinsic value of a firm.

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APPENDIX

Figure 1: FCFE

Firm X

FCFE=NI + Dep. - Capital Expenditures - Change in Noncash WC + Change in Debt

N	Year	Net Income	Depreciation	Capital Expenditures	Noncash WC	Change in Noncash WC	Change in Debt	FCFE	Percent Change
1	2004	2278.50	0	1419	-810.2				
2	2005	2602.20	0	1607	1666.4	2476.6	580.1	-901.3	
3	2006	3544.20	0	1742	468.2	-1198.2	-520.9	2479.5	-375.10%
4	2007	2395.10	0	1947	-1041.9	-1510.1	-1106.5	851.7	-65.65%
5	2008	4313.20	0	2136	868.2	1910.1	2876	3143.1	269.04%
6	2009	4551.00	0	1952	321.4	-546.8	374.3	3520.1	11.99%
7	2010	4946.30	0	2135	1333.9	1012.5	936.7	2735.5	-22.29%
8	2011	5503.10	0	2730	777.0	-556.9	636.8	3966.8	45.01%
9	2012	5464.80	0	3049	1397.3	620.3	1498.7	3294.2	-16.96%
10	2013	5585.90	0	2825	1756.4	359.1	497.3	2899.1	-11.99%

SQL Query:

```
SELECT CompanyDetail.Ticker, CompanyDetail.FYEnd, CompanyDetail.NI, CompanyDetail.Depn, CompanyDetail.CapEx,
qryChanNonCashWC.ChanNonCashWC, qryChanDebt.ChanDebt, NI+Depn-CapEx-ChanNonCashWC+ChanDebt AS FCFE
FROM (CompanyDetail INNER JOIN qryChanNonCashWC ON (CompanyDetail.Ticker = qryChanNonCashWC.Ticker) AND
(CompanyDetail.FYEnd = qryChanNonCashWC.FYEnd)) INNER JOIN qryChanDebt ON (qryChanNonCashWC.FYEnd =
qryChanDebt.FYEnd) AND (qryChanNonCashWC.Ticker = qryChanDebt.Ticker);
```

Figure 2: Arithmetic and Geometric Means for Revenue, EBITDA, EBIT, and Net Income

N	Year	Revenues	Percent Change	EBITDA	Percent Change	EBIT	Percent Change	Net Income	Percent Change
1	2004	19064.7		6964.9		3435.5		2278.5	
2	2005	20460.2	7.32%	7346.1	5.47%	3924.1	14.22%	2602.2	14.21%
3	2006	21586.4	5.50%	8044.7	9.51%	4330	10.34%	3544.2	36.20%
4	2007	22786.6	5.56%	9044.9	12.43%	3674.5	-15.14%	2395.1	-32.42%
5	2008	23522.4	3.23%	9869.5	9.12%	6205.7	68.89%	4313.2	80.08%
6	2009	22744.7	-3.31%	10093.5	2.27%	6559.9	5.71%	4551.0	5.51%
7	2010	24074.6	5.85%	11015.1	9.13%	7229.4	10.21%	4946.3	8.69%
8	2011	27006.0	12.18%	12168.1	10.47%	8269.9	14.39%	5503.1	11.26%
9	2012	27567.0	2.08%	12343.3	1.44%	8309.6	0.48%	5464.8	-0.70%
10	2013	28105.7	1.95%	12527.1	1.49%	8486.7	2.13%	5585.9	2.22%
	Arithmetic average		4.48%		6.81%		12.36%		13.89%
	Geometric Average		4.41%		6.74%		10.57%		10.48%
	Standard deviation		4.27%		4.22%		23.07%		30.57%

SQL Query:

```
SELECT CompanyDetail.Ticker, CompanyDetail.FYEnd, CompanyDetail.REV,
CompanyDetail.EBITDA, CompanyDetail.EBIT, CompanyDetail.NI FROM CompanyDetail;
```

Figure 3: Arithmetic and Geometric Means for FCF, FCFE, and FCFF

N	Year	FCF	Percent Change	FCFE	Percent Change	FCFF	Percent Change
1	2004						
2	2005	477.5		-901.3		-1924.65	
3	2006	4175.8	774.60%	2479.5	-375.10%	3371.47	-275.17%
4	2007	2049.5	-50.92%	851.7	-65.65%	241.48	-92.84%
5	2008	5123.5	149.99%	3143.1	269.04%	2257.28	834.78%
6	2009	3479.0	-32.10%	3520.1	11.99%	2803.96	24.22%
7	2010	4125.7	18.59%	2735.5	-22.29%	2519.80	-10.13%
8	2011	4833.6	17.16%	3966.8	45.01%	2877.46	14.19%
9	2012	3895.6	-19.41%	3294.2	-16.96%	2689.26	-6.54%
10	2013	4233.9	8.68%	2899.1	-11.99%	2478.97	-7.82%
	Arithmetic average		108.32%		-20.74%		60.09%
	Geometric Average		31.36%		#NUM!		-202.85%
	Standard deviation		276.03%		176.09%		328.05%

Figure 4: Single Exponential Smoothing Model

FirmX	Variable	Last Annual	Predict	Lower	Upper	α	MAPE	MAD	MSD
FirmX	FCF	$4,233.87	$3,774.15	$758.78	$6,789.53	0.178	101.0	1231.0	2352698.0
FirmX	PCT-FCF	8.68%	80.89%	-381.60%	543.38%	0.067	330.4	1.9	8.2
FirmX	FCFE	$2,899.10	$3,363.76	$460.18	$6,267.34	0.549	57.0	1185.0	2162289.0
FirmX	PCT-FCFE	-11.99%	346409.00%	20178.70%	672640.00%	0.559	65.0	2.2	9.7
FirmX	FCFF	2,478.97	2,092.31	(1,414.99)	5,599.60	0.118	132.0	1432.0	3119862.0
FirmX	PCT-FCFF	-7.82%	NA	NA	NA	NA	NA	NA	NA
FirmX	Rev	$28,105.70	$27,210.40	$25,193.40	$29,227.50	1.864	4.0	823.0	952810.0
FirmX	PCT-Rev	1.95%	5.11%	-3.68%	13.90%	0.202	87.5	0.0	0.0
FirmX	EBITDA	$12,527.10	$12,282.60	$11,427.60	$13,137.50	1.904	4.0	349.0	196992.0
FirmX	PCT-EBITDA	1.49%	7.56%	-0.30%	15.42%	0.147	117.5	0.0	0.0
FirmX	EBIT	$8,486.70	$8,309.90	$6,636.33	$9,983.47	1.011	12.0	683.0	988502.0
FirmX	PCT-EBIT	2.13%	NA	NA	NA	NA	NA	NA	NA
FirmX	NI	$5,585.90	$5,443.65	$3,822.43	$7,064.87	0.791	18.0	662.0	671074.0
FirmX	PCT-NI	2.22%	NA	NA	NA	NA	NA	NA	NA

Exponential Smoothing Model	where
$\hat{Y}_{t+1} = \alpha Y_t + (1-\alpha)\hat{Y}_t$	$\hat{Y}_{t+1}$ = new smoothed value or forecast value for the next period α = smoothing constant (0<α<1); Y_t = new observation or the actual value of the series in period t; $\hat{Y}_t$ = the old smoothed value or the forecast for period t.

Figure 5: FCFE Forecast for 2014

Year	Actual FCFE	Predicted FCFE	Error
1	-$901.30	$551.72	-$1,453.02
2	$2,479.50	-$228.75	$2,708.25
3	$851.70	$1,225.95	-$374.25
4	$3,143.10	$1,024.93	$2,118.17
5	$3,520.10	$2,162.67	$1,357.43
6	$2,735.50	$2,891.79	-$156.29
7	$3,966.80	$2,807.84	$1,158.96
8	$3,294.20	$3,430.36	-$136.16
9	$2,899.10	$3,111.15	-$458.12
Forecast	$3,357.22		
Lower	$410.58		
Upper	$5,811.72		
α	0.537135		

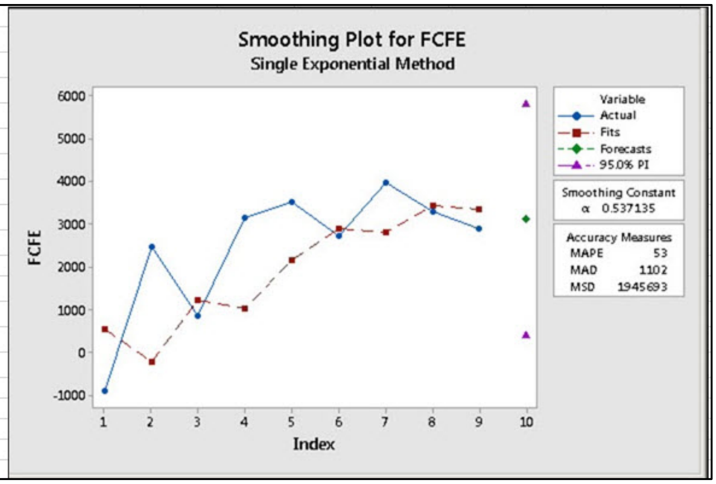

Figure 6: Revenue Growth Rate Forecast for 2014

Year	Rev-PCT	Predicted Rev-PCT	Error
1	7.32%	3.50%	3.82%
2	5.50%	3.82%	1.68%
3	5.56%	3.96%	1.60%
4	3.23%	4.10%	-0.87%
5	-3.31%	4.02%	-7.33%
6	5.85%	3.40%	2.44%
7	12.18%	3.61%	8.57%
8	2.08%	4.34%	-2.26%
9	1.95%	3.96%	-2.19%
Forecast	5.04%		
Lower	-4.41%		
Upper	12.33%		
α	0.084659