1. FINANCIAL FORECASTING

**Text Problem Solutions**

1. Using the data in the student spreadsheet file P&G.xlsx (to find the student spreadsheets for Financial Analysis with Microsoft Excel, fifth edition, go to www.cengage.com/finance/mayes) forecast the June 30, 2009, income statement and balance sheet for Procter & Gamble. Use the percent of sales method and the following assumptions: (1) Sales in FY 2009 will be $92,452; (2) The tax rate will be 30%; (3) Each item that changes with sales will be the five-year average percentage of sales; (4) the preferred dividend will be 190; and (5) the common dividend payout ratio will be the average of the last five years.

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| **Worksheet:** |
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| **Formulas:** |
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a. What is the discretionary financing needed in 2009? Is this a surplus or deficit?

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| **Worksheet:** |
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| Iteration Notes:   * B37 calculates DFN as usual. * B38 keeps track of the total DFN if iteration is turned on, otherwise it equals DFN. * B39 controls whether or not the iterative calculation runs. A 0 means do not iterate, a 1 means do iterate. * If iteration is off, then LTD = last year LTD. If iteration is on, then LTD accumulates until DFN is zero. * This workbook contains a macro that turns the iteration option on when it is opened. When this workbook is closed, the iteration option is reset to its original value (on or off). |
| **Formulas:** |
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b. Assume that the DFN will be absorbed by long-term debt and that the total interest rate is 6.22% of LTD. Set up an iterative worksheet to eliminate it.

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| **Formulas:** |
| The same as those in part a. |

c. Create a chart of cash vs. sales and add a linear trend line. Does there appear to be a consistent trend in this relationship?

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*Possible Answer:* There does not appear to be a consistent relationship between cash and revenues over this 5-year period.

d. Use the regression tool to verify your results from part c. Is the trend statistically significant? Use at least three methods to show why or why not.

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*Possible Answer:* The regression results support the conclusion from the chart. Note that the R-Square is very low, the F-statistic is not significant, and the coefficient for Revenue is not statistically significant (low t-stat, low p-value, 0 is in the 95% confidence interval).

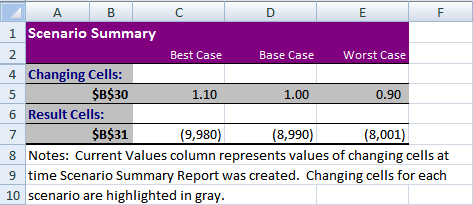
e. Turn off iteration, and use the Scenario Manager to set up three scenarios:

1) Best Case — Sales are 10% higher than expected.

2) Base Case — Sales are exactly as expected.

3) Worst Case — Sales are 10% less than expected.

What is the DFN under each scenario?



2. Use the same data as in Problem 1.

a. Recalculate the percentage of sales income statement, but this time use the TREND function to forecast depreciation expense, other income, and interest expense.

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| **Worksheet:** |
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| **Formulas:** |
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b. Recalculate the percentage of sales balance sheet, but this time use the TREND function to forecast cash, property plant and equipment (gross), intangibles, and other noncurrent assets.

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| **Formulas:** |
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| **Iteration Notes:**   * B37 calculates DFN as usual. * B38 keeps track of the total DFN if iteration is turned on, otherwise it equals DFN. * B39 controls whether or not the iterative calculation runs. A 0 means do not iterate, a 1 means do iterate. * If iteration is off, then LTD = last year LTD. If iteration is on, then LTD accumulates until DFN is zero. * This workbook contains a macro that turns the iteration option on when it is opened. When this workbook is closed, the iteration option is reset to its original value (on or off). |

c. Do these new values appear to be more realistic than the original values? Does this technique make sense for each of these items? Might other income statement or balance sheet items be forecasted in this way?

*Possible Answer:* These values reflect more accurately the fact that sales have been growing over the last five years. The technique makes sense as long as historical data is expected to have predictive power to forecast future behavior of these items.

*Possible Answer:* The R2 is .334 which means that about 33.4% of the total variation of returns on AT&T is explained by returns on the S&P 500. In other words, these values suggest a weak lineal relationship between returns on AT&T and the S&P 500. The results are substantially different with Fidelity Contrafund, since here R2 is .737. This means that about 73.7% of the total variation of returns on Fidelity Contrafund is explained by returns on the S&P 500. This makes sense since the fund contains more than just one security, and the longer the number of securities in the portfolio, the closer the behavior resembles that of the market, measured by the S&P500 in this problem.

c. Using the Analysis ToolPak add-in, run a regression analysis on this data. Your dependent variable is the AT&T returns, and the independent variable is the S&P 500 returns. Does this confirm the earlier results? The slope coefficient is AT&T’s beta. Is the beta of this stock statistically significant? Explain.

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*Possible Answer:* This confirms partially the previous results since now R2 is .5784 which means that about 57.84% of the total variation of returns on AT&T is explained by returns on the S&P 500. This result also suggests a little bit stronger lineal relationship between returns on AT&T and the S&P 500. The coefficient of AT&T is significant, since its t-statistic is very high (5.3997) and the *p*-value is close to zero. This means that returns on S&P500 are valuable in predicting returns on AT&T.

d. Repeat part c using the returns on Contrafund and the S&P 500. Compare the R2 from both regressions. What conclusions can you draw from the difference?

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*Possible Answer:* These results are very similar to those of part b, since R2 is .7373 which means that about 73.73% of the total variation of returns on Fidelity Contrafund is explained by returns on the S&P 500. The coefficient of Fidelity Contrafund is also significant, since its t-statistic is very high (12.7597) and the *p*-value is close to zero. This means that returns on S&P500 are valuable in predicting returns on Fidelity Contrafund.