Research Objective: The yield on a general obligation bond for the city of Davenport fluctuates with the market. The monthly quotations for 2006 are given in Table P-9.

TABLE P-6

Month	*Mutual Fund Price*
January	19.39
February	18.96
March	18.20
April	17.89
May	18.43
June	19.98
July	19.51
August	20.63
September	19.78
October	21.25
November	21.18
December	22.14

TABLE P-8

Time Period	Y_t	$\hat{Y}_t$	e_t
1	200	200	—
2	210	—	—
3	215	—	—
4	216	—	—
5	219	—	—
6	220	—	—
7	225	—	—
8	226	—	—

TABLE P-9

Month	*Yield*
January	9.29
February	9.99
March	10.16
April	10.25
May	10.61
June	11.07
July	11.52
August	11.09
September	10.80
October	10.50
November	10.86
December	9.97

a. Find the forecast value of the yield for the obligation bonds for each month, starting with April, using a three-month moving average.

b. Find the forecast value of the yield for the obligation bonds for each month, starting with June, using a five-month moving average.

c. Evaluate these forecasting methods using the MAD.

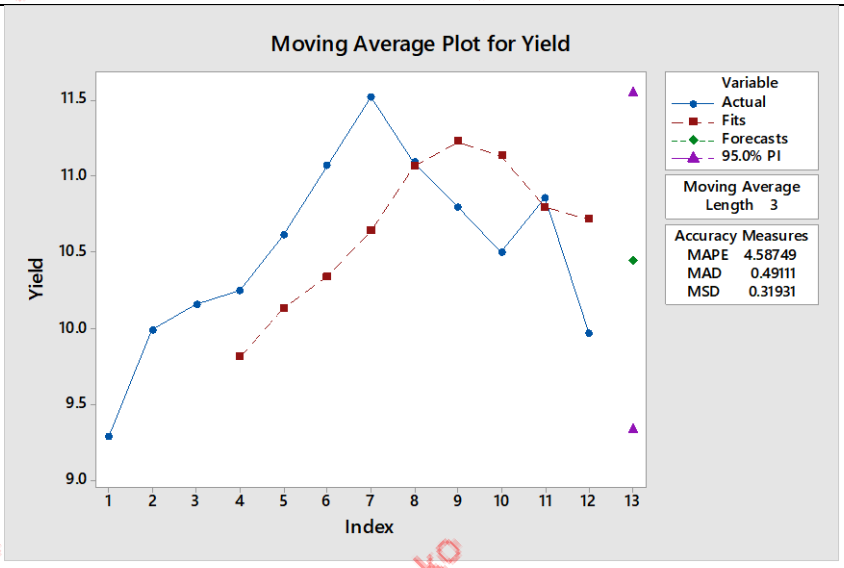
d. Evaluate these forecasting methods using the MSE.

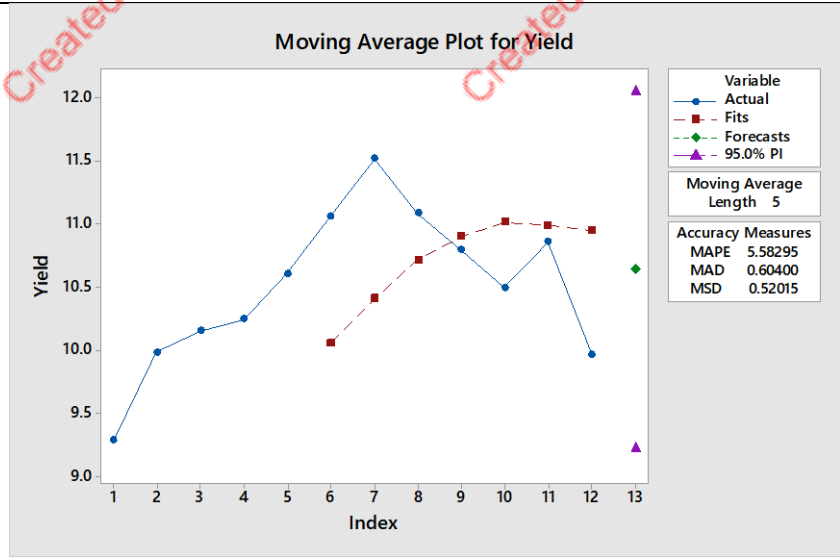
e. Evaluate these forecasting methods using the MAPE.

f. Evaluate these forecasting methods using the MPE.

g. Forecast the yield for January 2007 using the better technique. h. Write a memo summarizing your findings.

Graph Analysis – Looking at the graph of moving averages of 3, we can see that estimated fits line is underestimating the actual fit from 4 – 8. Then the fits line is overestimating from index 8 – 11. And back to underestimating at index 11 and overestimating from 11-12 . The mean absolute percentage error is 4.58749, the mean absolute deviation is .49111, and the mean square deviation or MSE is .31931.



Graph Analysis – After looking at the graph for moving averages for 5 months, we can see that the estimated fits line is underestimating from index 6 to a little less than 9. The back to overestimating from approximately 9 to 12. The mean absolute percentage error is 5.58295, the mean absolute deviation is .6040, and the mean square deviation or MSE is .52015.	

Memo

To: City of Davenport General Obligation Bond Management

Re: Accuracy Measures for Moving Averages

To Management Personal:

As per your request, after comparing both moving averages plots for the yield for 3 and 5 years, we can see that the plot for 3 years has a lower mean absolute percentage error of 4.58749 compared to 5.58295 for the plot of 5 years. This means that the moving averages for 3 years is better to use since it shows a better accuracy of the same techniques of difference series. When comparing the other accuracy measurements the mean absolute deviating of .49111 is lower by .11289 compared to the 5 year moving averages and the mean squared error or MSE of .49111 is lower by .20084. For these reasons it is recommended that the moving averages plot for 3 years should be used for business decisions.