

Seminar 24

1. Given the past 4 years sales data as follows:

Year	Quarter I	Quarter II	Quarter III	Quarter IV
1990	120	150	90	100
1991	135	170	125	140
1992	150	220	150	170
1993	175	250	150	200

- a. Develop the trend for the above time series by using:
 - i. three period moving average;
 - ii. five period moving average.
 - b. Plot the time series, 3-periods M.A. and 5-period M.A. in a graph. What is the effect on increasing the moving average period?
 - c. Forecast the sales in 1994 Quarter I by using:
 - i. three period moving average;
 - ii. five period moving average.
 - d. What is the appropriate period for doing moving average?
2. The following data indicates the number of mergers that took place in an industry over a ten periods.

Year	1	2	3	4	5	6	7	8	9	10
Number	23	31	25	35	42	70	58	120	103	190

- a. What type of trend might best be fit to this time series?
- b. Find the exponentially smoothed series for the time series by using
 - i. $\alpha = 0.2$
 - ii. $\alpha = 0.8$
- c. Which value of α should be used if you want the smoothed series to be highly responsive to sudden changes in the merger rate?
- d. Using the selected α in part (c), what is the forecasted number of mergers in year 11?