

# Study guide: Forecasting p. 1-9

## *Delphi and Other Qualitative Models* 1

Delphi is most important.

## *Leading Indicator ("Causal") Models* 1

See website for landscape blocks example.

## *Time Series Models* 2

We will ignore cycle: the party in power always says the cycle is going up, the other party always says it's going down!

## *Measuring the Error in Historical Forecasting* 3

Statistics is the science of error like botany is the science of plants, meteorology is the science of weather. On exams you will need to find Bias, MAD, MAPE, and MSE without a computer.

## *Rocky Gold's Problem* 4

Forecasting is done within a **situation**, for a **reason**. These determine which of the various forecasting and error-measuring techniques we'll study makes sense to try.

## *Naïve Models* 4

Always compare the performance (Bias, MAD, MAPE, and MSE) of any of the other models with the naïve model.

On tests you'll have to do a naïve forecast. This is good news since it's so easy. Forecast  $Y_t$  using  $F_t = Y_{t-1}$

## *Exponential Smoothing Models* 5

Study the pros and cons.

## *Simple Exponential Smoothing* 5

Be able to do forecast  $Y_t$  using  $F_t = \alpha * Y_{t-1} + (1-\alpha) * F_{t-1}$  without a computer.

## *Double Exponential Smoothing* 6

Just be aware of why it exists. Ignore the appendix.

## *Simple Moving Average* 7

Be able to do forecast  $Y_t$  using  $F_t = \frac{\sum_{i=1}^k Y_{t-i}}{k}$ , without a computer.

Be able to interpret the details of the printout on page 9. How can you tell by the graph that the equation of the straight line has a positive slope?

Given the value of the intercept  $a$  and the slope  $b$ , be able to calculate the model value for any past or future date.

Use Bias, MAD, MAPE, and MSE to think about how well naïve 1, naïve 2, exponential smoothing, moving average, or trend models suit Rocky's **purpose** in his **situation**.