

## PAM 3100 –Discussion 8

## 1. Level-Log

- a. Using the MEAP data, estimate the model

$$\widehat{math10} = \widehat{\beta}_0 + \widehat{\beta}_1 \log(expend) + \widehat{\beta}_2 lnchprg$$

- b. Report the results in equation form.
- c. Interpret the coefficients  $\beta_0$ ,  $\beta_1$  and  $\beta_2$ .
- d. What is the predicted percentage of students passing the math exam when  $\log(expend)=9$  and  $lnchprg=56$ ?
- e. If the percent of students eligible for free or reduced lunch increases by 10 percentage points, what is the predicted change in the math pass rate?
- f. If spending increases by 10% what is the estimated percentage point increase in math10?

## 2. Level-Log 2:

- a. Use the CEO data, estimate the model:

$$\widehat{salary} = \widehat{\beta}_0 + \widehat{\beta}_1 \log(sales) + \widehat{\beta}_2 ceoten + \widehat{\beta}_3 ceoten^2 + \widehat{\beta}_4 mktval$$

- b. Interpret the intercept.
- c. Interpret the coefficients on each variable.

- d. What is the marginal effect of salary from increasing tenure for someone with 5 years of tenure?
- e. What is the level of tenure that maximizes salary?
3. Log-Level
- a. Now estimate the model:
- $$\log(\widehat{salary}) = \widehat{\beta}_0 + \widehat{\beta}_1 sales + \widehat{\beta}_2 ceoten + \widehat{\beta}_3 ceoten^2 + \widehat{\beta}_4 mktval$$
- b. Interpret the intercept.
- c. Interpret the coefficients on each variable.
- d. What is the predicted percentage change in salary when mrktval increases by 1000?
4. Log-Log
- a. Now estimate the model:
- $$\log(\widehat{salary}) = \widehat{\beta}_0 + \widehat{\beta}_1 \log(sales) + \widehat{\beta}_2 ceoten + \widehat{\beta}_3 ceoten^2 + \widehat{\beta}_4 mktval$$
- b. Interpret the coefficients on sales.
- c. What is the predicted percentage change in salary if sales increases by 20%?