Chapter 5 - Indicator Variable Regression

- 5.1 – **[10 pts]**
  1. TAME = 1 if in the "tame" group and TAME = 0 if in the "diet-curtailed" group
  2. $\mu_{GROWTH} = \alpha + \beta_1 TIME + \delta_1 TAME + \gamma_1 TAME * TIME$
  3. In table below

Group	*Tame*	Submodel ($\mu_{GROWTH} =$)
Diet-curtailed	0	$= \alpha + \beta_1 TIME$
Tame	1	$= (\alpha + \delta_1) + (\beta_1 + \gamma_1) TIME$

  4. In the list below.
     - α is intercept of diet-curtailed (reference) group
     - β_1 is slope of diet-curtailed (reference) group
     - δ_1 is difference in intercept of tame and diet-curtailed groups (i.e., tame-dietcurtailed)
     - γ_1 is difference in slopes of tame and diet-curtailed groups (i.e., tame-dietcurtailed)
  5. Shown below

$$H_O : \mu_{GROWTH|\ldots} = \alpha + \beta_1 TIME + \delta_1 TAME$$
$$H_A : \mu_{GROWTH|\ldots} = \alpha + \beta_1 TIME + \delta_1 TAME + \gamma_1 TAME * TIME$$

  6. Shown below

$$H_O : \mu_{GROWTH|\ldots} = \alpha + \beta_1 TIME$$
$$H_A : \mu_{GROWTH|\ldots} = \alpha + \beta_1 TIME + \delta_1 TAME$$