Part 13

SIMPLE LINEAR REGRESSION

- **Describing a trend in bivariate data:**
  - **High-degree polynomial as an 'exact' model;**
  - **Low-degree polynomial to model a trend;**
  - **Populations and samples;**
  - **The term 'regression'.**
- **The method of least squares:**
  - **Regression of Y on X;**
  - **Regression of X on Y;**
  - **Minimizing squared perpendicular distances.**
- **Analysis of variance (ANOVA):**
  - **Partitioning a sum of squared differences:**
    - **SSM, SSE and SS_y;**
    - **Mean squares and the *F*-ratio;**
  - **Coefficient of determination and correlation.**
- **Assessing the fit of a regression model:**
  - **Visual inspection;**
  - **r^2 and r;**
  - **The *F*-ratio.**
- **Parameter estimating:**
  - **Slope;**
  - **Intercept;**
  - **Mean of *Y* for given x;**
  - **Value of *Y* for given x.**

Part 13 Table of Contents

2003-05-20 †Handout to be distributed in class