

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 .

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