

F Testing multicollinearity with Excel

**Testing multicollinearity with VIF
(Variance Inflation Factor)**

$$R_m - R_f = \alpha_0 + \beta_1 \times \text{SMB} + \beta_2 \times \text{HML}$$

$$R^2 \text{ } R_m - R_f = 0.01$$

$$\text{VIF}(R_m - R_f) = 1.006$$

$$\text{SMB} = \alpha_0 + \beta_1 \times (R_m - R_f) + \beta_2 \times \text{HML}$$

$$R^2 \text{ SMB} = 0.10$$

$$\text{VIF}(\text{SMB}) = 1.113$$

$$\text{HML} = \alpha_0 + \beta_1 \times (R_m - R_f) + \beta_2 \times \text{SMB}$$

$$R^2 \text{ HML} = 0.11$$

$$\text{VIF}(\text{HML}) = 1.119$$
