$$X_1 = \beta_0 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_p X_p + \epsilon$$

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_p X_p + \epsilon$$

$$\widehat{Var}(\beta_1) = \frac{s^2}{(n-1)\widehat{Var}(X_1)} \times \frac{1}{1 - R_1^2}$$

$$X_1 = \beta_0 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_p X_p + \epsilon$$

$$\begin{aligned} \widehat{Var}(\beta_1) &= \frac{s^2}{(n-1)\widehat{Var}(X_1)} \times \frac{1}{1 - R_1^2} \\ &= \frac{s^2}{(n-1)\widehat{Var}(X_1)} \times \frac{1}{Tolerance} \end{aligned}$$

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_p X_p + \epsilon$$

$$X_1 = \beta_0 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_p X_p + \epsilon$$

$$\Sigma u_i = \lambda_i u_i$$

$$\lambda_1, \lambda_2, \cdots, \lambda_p$$

$$u_1, u_2, \cdots, u_p$$

$$\hat{a}_i = u_i$$

$$Var(Y_i) = \lambda_i$$

$$\phi_i = u_i$$