

Appendix 2:

Dropping a non-significant term?

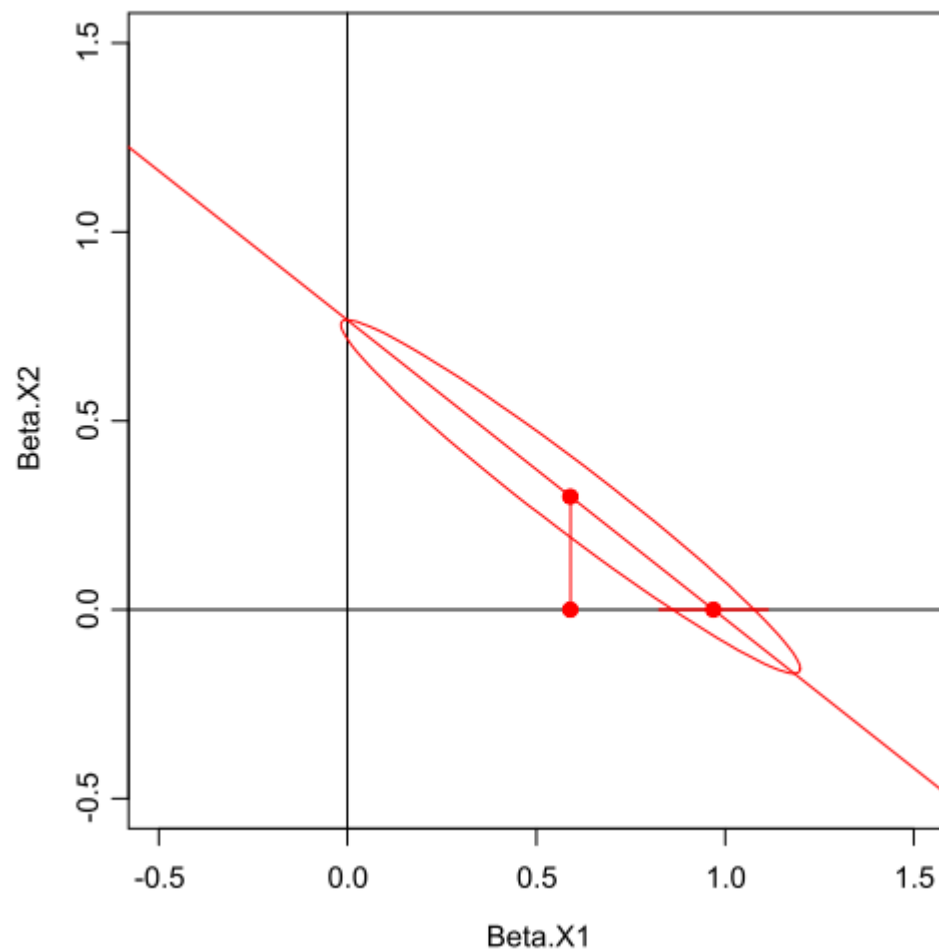
Fact or myth: “If a term is not significant, dropping it should not make much of a difference”

$$\hat{Y} = \hat{\beta}_0 + \hat{\beta}_1 X_1 + \hat{\beta}_2 X_2$$

$$\hat{Y} = \hat{\phi}_0 + \hat{\phi}_1 X_1$$

If $\hat{\beta}_2$ is not significant, what effect can dropping it have on the model?

What happens to the coefficient for X_1 in the following situation?



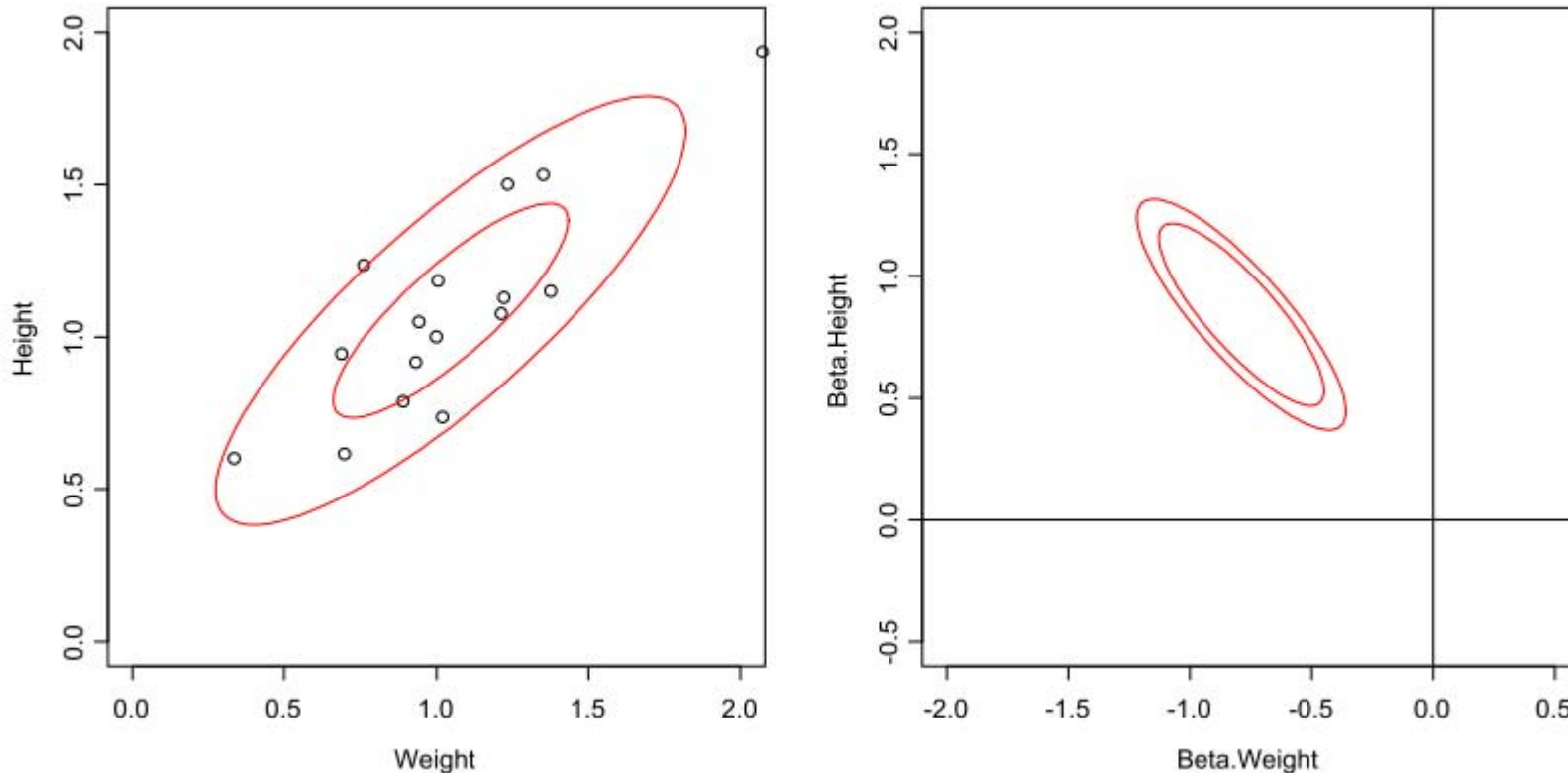
When we drop X_2 the effect of X_1 goes from appearing not to be significant to being highly significant. If it is important to control for X_2 in interpreting the coefficient of X_1 then dropping X_1 leads to a fallacious result even though the effect of X_1 is not significant.

Appendix 3:

Adding non-significant terms?

Fact or myth: If neither X_1 nor X_2 are significant in simple regressions, then they are unlikely to be significant in a multiple regression.

Consider:



What does this suggest about forward stepwise regression?