Deviations from assumptions
(STATS544.2: Applied multiple linear regression)

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Plotting residuals

Common deviations from assumptions

Regression diagnostics

The same regression diagnostics apply as for SLR.
In addition, matrix methods give tools based on the hat matrix.

Transformations to normality

Weighting

Serial correlations

Errors in variables

The basic regression models assume the x values to be measured without error.

Suppose

$$y = \sum_j b_j x_j + e$$

but you only measure

$$x_j^* = x_j + d.$$

Then estimates of the parameters become biased. This may or may not be important.

A good basic summary: http://en.wikipedia.org/wiki/Errors-in-variables$_m$ odels