Problem Set 8

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1 Discussion of Beta Estimations

The estimates of the Betas in the "easy way" OLS model are quite close to the true values. All are within 0.003 of the true values. This margin of error is fairly similar to that of the more complex algorithm estimations, although both the L-BFGS (for both OLS and MLE) and Nelder-Mead were ever so slightly more accurate, with 0.0013 being the largest difference between a true and estimated beta in these algorithms.

Note that my modelsummary is on the next page of the PDF to make the formatting look nicer in my opinion.

	(1)
X1	1.501***
	(0.002)
X2	−1.001***
	(0.002)
X3	−0.252***
	(0.002)
X4	0.749***
	(0.002)
X5	3.501***
	(0.002)
X6	−2.001***
	(0.002)
X7	0.499***
	(0.002)
X8	1.003***
	(0.002)
X9	1.247***
	(0.002)
X10	2.001***
	(0.002)
Num.Obs.	100 000
R2	0.991
R2 Adj.	0.991
AIC	145 143.6
BIC	145 248.3
Log.Lik.	−72 560.811
RMSE	0.50

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

2 Model Summary