

PS8_K*ontchou*

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1 Introduction

The beta estimations for 5 were virtually identical to the beta values given in the problem set. The same applies for the gradient descent calculation for 6. The results in 7 differ for the optimal value of the objective function. Using L-BFGS, the value is 24953.2835216034. Using Nelder-Mead; the value is 72485.6149016619, and there are 700 more iterations

Table 1:

	<i>Dependent variable:</i>
	Y
X1	1.501*** (0.002)
X2	-0.996*** (0.002)
X3	-0.249*** (0.002)
X4	0.747*** (0.002)
X5	3.502*** (0.002)
X6	-1.999*** (0.002)
X7	0.501*** (0.002)
X8	0.999*** (0.002)
X9	1.253*** (0.002)
X10	1.999*** (0.002)
Observations	100,000
R ²	0.991
Adjusted R ²	0.991
Residual Std. Error	0.500 (df = 99990)
F Statistic	1,080,712.000*** (df = 10; 99990)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01