PS8

gaoningjing0012

March 2020

	beta	beta.hat.OLS	beta.hat.LBFGS	beta.hat.NM	beta.hat.MLE
X1	1.5005793	1.500579	2.1712663	2.1712666	2.1712663
X2	-0.9912363	-0.9912364	0.4958889	0.4958889	0.4958889
X3	-0.2472996	-0.2472997	0.8292439	0.8292438	0.8292439
X4	0.7443806	0.7443806	-0.3151552	-0.3151550	-0.3151550
X5	3.5035336	3.5035338	-0.7235620	-0.7235619	-0.7235622
X6	-1.9988728	-1.9988729	-1.0234978	-1.0234978	-1.0234983
X7	0.5022677	0.5022677	2.1712663	2.1712666	0.3006270
X8	0.9974800	0.9974801	0.4958889	0.4958889	2.1712663
X9	1.2556600	1.2556600	0.8292439	0.8292438	0.4958889
X10	1.9987691	1.9987692	-0.3151552	-0.3151550	0.8292439

we can see from the above table, we can see my estimates close to the true value. and the Nelder Mead is a little bit bigger than the LBFGS.

1

Table 1:

	Dependent variable:
	Y
X1	1.501***
	(0.002)
X2	−0.991***
	(0.003)
X3	−0.247***
	(0.003)
X4	0.744***
	(0.003)
X5	3.504***
	(0.003)
X6	−1.999***
	(0.003)
X7	0.502***
	(0.003)
X8	0.997***
	(0.003)
X9	1.256***
	(0.003)
X10	1.999***
	(0.003)
Observations	100,000
R^2	0.971
Adjusted R^2	0.971
Residual Std. Error	0.500 (df = 99990)
F Statistic	338,240.000*** (df = 10; 99990)

Note: *p<0.1; **p<0.05; ***p<0.01