

# E797B - Problem Set 3

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October 2020

## Instrumental Variables Estimation

Table 1: Different estimations of the effect of  $x$  (endogenous) on  $y$

	$Q = 1$		$Q = 10$		$Q = 20$	
	Bias	Type 1 Error	Bias	Type 1 Error	Bias	Type 1 Error
OLS	0.795	1.000	0.795	1.000	0.791	1.000
2SLS	-0.079	0.070	0.414	0.680	0.558	0.930
CLR	-0.079	0.000	0.414	0.090	0.558	0.050
LIML	-0.079	0.070	0.041	0.170	-0.074	0.070
Lasso	0.044	0.109	0.240	0.293	0.226	0.280

Lasso regression did not pick any instrument 36.00 , 59.00 and 75.00 % of the times for  $Q = 1, 10$  and 20 respectively. The reported outcomes for Lasso correspond to the cases when it selected at least one instrument