

Appendix A The estimated results of production function by using OLS

Variables	Coefficient	Variables	Coefficient
$\ln(\text{fertilizer})$	0.468** (0.214)	$\ln(\text{land}*\text{labor})$	0.016 (0.035)
$\ln(\text{land})$	0.222 (0.483)	$\ln(\text{land}*\text{intermediate})$	0.063 (0.067)
$\ln(\text{labor})$	0.078 (0.147)	$\ln(\text{land}*\text{time})$	-0.001 (0.005)
$\ln(\text{intermediate})$	0.305 (0.309)	$\ln(\text{labor}^2)$	-0.006 (0.020)
Time	-0.024 (0.025)	$\ln(\text{labor}*\text{intermediate})$	-0.005 (0.022)
$\ln(\text{fertilizer}^2)$	-0.135*** (0.032)	$\ln(\text{labor}*\text{time})$	-0.005** (0.002)
$\ln(\text{fertilizer}*\text{land})$	0.101* (0.052)	$\ln(\text{intermediate}^2)$	-0.067 (0.051)
$\ln(\text{fertilizer}*\text{labor})$	-0.002 (0.019)	$\ln(\text{intermediate}*\text{time})$	0.010** (0.004)
$\ln(\text{fertilizer}*\text{intermediate})$	0.009 (0.031)	$\ln(\text{time}^2)$	-0.002*** (0.000)
$\ln(\text{fertilizer}*\text{time})$	-0.001 (0.003)	Constant	4.559*** (1.064)
$\ln(\text{land}^2)$	-0.159 (0.115)	F value	8247.03
N	4281	R-sq	0.98

*, **, *** represent the significance levels of 10, 5 and 1%, respectively. Standard errors are in parentheses.

Appendix B The estimated results of production function by using SFA fixed effect (without IV)

Variables	Coefficient	Variables	Coefficient
$\ln(\text{fertilizer})$	0.574*** (0.196)	$\ln(\text{land}*\text{labor})$	0.028 (0.031)
$\ln(\text{land})$	0.389 (0.431)	$\ln(\text{land}*\text{intermediate})$	-0.002 (0.059)
$\ln(\text{labor})$	0.098 (0.132)	$\ln(\text{land}*\text{time})$	-0.000 (0.005)
$\ln(\text{intermediate})$	0.095 (0.267)	$\ln(\text{labor}^2)$	-0.017 (0.017)
Time	-0.020 (0.021)	$\ln(\text{labor}*\text{intermediate})$	0.004 (0.019)
$\ln(\text{fertilizer}^2)$	-0.125*** (0.030)	$\ln(\text{labor}*\text{time})$	-0.006*** (0.002)
$\ln(\text{fertilizer}*\text{land})$	0.126*** (0.048)	$\ln(\text{intermediate}^2)$	-0.003 (0.044)
$\ln(\text{fertilizer}*\text{labor})$	-0.011 (0.017)	$\ln(\text{intermediate}*\text{time})$	0.006* (0.003)

<i>Ln(fertilizer*</i>	-0.015	<i>Ln(time²)</i>	-0.001***
<i>intermediate)</i>	(0.028)		(0.000)
	0.003	<i>Constant</i>	4.768***
<i>Ln(fertilizer*time)</i>	(0.003)		(0.936)
	-0.124	Log likelihood	4311.75
<i>Ln(land²)</i>	(0.104)	Wald chi2	383741.45
N	4281		

*, **, *** represent the significance levels of 10, 5 and 1%, respectively. Standard errors are in parentheses.