

Table A1: Distribution of number of plots cultivated by tenants and landlords

Number of plots cultivated	Number of Tenants	Number of Landlords	Total
1	15	51	66
2	39	79	118
3	41	19	60
4	31	8	39
5	21	9	30
6	13	3	16
7	1	0	1
8	4	0	4
10	1	0	1
11	1	0	1
12	1	0	1
14	1	0	1
Total	169	169	338

Table A2: Available input and investment costs

	Median	Mean	Std dev.
<i>Hired labor (ganyu)</i>			
Percent of sample who hired in labor during season	-	45	50
hours of hired labor over the season (conditional) ¹	232	470	544
Total hired labor expenditure over season (conditional) ¹	30,500	64,069	81,089
Labor rate (MWK/hour) ¹	132	247	366
<i>Inorganic fertilizer</i>			
Percent of sample who purchased commercial fertilizer during season	-	65	48
Quantity of commercial fertilizer purchased over season (conditional)	100	156	224
Total commercial fertilizer expenditure in MWK over season (conditional)	36,000	60,464	88,818
Commercial fertilizer price (MWK/kg) ¹	360	499	834
<i>Hybrid maize seed</i>			
Percent of sample who purchased commercial hybrid maize seed during season	-	47	50
Quantity of commercial seed purchased over season (conditional)	10	15	19
Total commercial hybrid maize seed expenditure over season in MWK conditional	6,000	11,362	14,721
Commercial hybrid maize seed price in MWK/kg ¹	700	821	658
<i>Fruit trees</i>			
Percent of sample who ever purchased fruit trees	-	58	49
Quantity of fruit trees (conditional)	5	6	6
Value of fruit trees in MWK (conditional)	9,000	20,116	31,991
Fruit tree price in MWK/kg ¹	2,000	3,779	5,237

Note US \$1.00 = MWK 700 in 2016; top and bottom 2% of observations winsorized

Table A3: Number of years over the past 5 that the landlord has rented out the plot

years	percent	cumulative percent
0	3.24	3.24
1	46.4	49.64
2	28.42	78.06
3	12.95	91.01
4	4.68	95.68
5	4.32	100.00

N=278

Table A4: Main crops grown by plot ownership and cultivation status (%)

	(1) Rented plot, tenant cultivated	(2) Owned plot, tenant cultivated	(3) Owned plot, landlord cultivated
Local maize	11.24	13.16	19.40
OPV maize	0.29	0.00	0.30
Hybrid maize	33.72	43.23	33.73
Recycled hybrid maize	8.65	4.51	11.04
Tobacco	5.48	5.26	3.88
Groundnut	29.97	16.54	18.51
Sweet potato	0.86	1.50	1.49
Irish potato	0.00	0.00	0.30
Finger millet	0.00	0.38	0.00
Soya beans	2.59	1.88	1.49
Cotton	4.03	6.02	3.88
Sunflower	0.29	0.00	0.00
Sugar cane	0.00	0.00	0.60
Tanaposi	0.00	0.38	0.30
Tomato	0.00	1.13	0.60
Pea	0.00	0.75	0.30
Paprika	0.29	0.38	0.30
Pineapple	2.02	3.01	1.79
Nothing planted	0.58	1.88	2.09
Number of observations	347	266	335

Table A5: Factors associated with a landlord feeling insecure about a plot.

VARIABLES	(1)	(2)	(3)	(4)	(5)
sub plot distance from house (walking minutes)	0.001 (0.002)				0.001 (0.001)
=1 if landlord views sub plot as having good soil quality		-0.01 (0.084)			-0.02 (0.084)
=1 if landlord views sub plot as having fair soil quality		-0.03 (0.080)			-0.04 (0.080)
=1 if soil is black or brown, 0 if red or grey or other		0.00 (0.068)			0.02 (0.066)
=1 if obtained plot from chief			0.29* (0.172)		0.31* (0.176)
=1 if male controls the plot				-0.02 (0.084)	-0.03 (0.082)
R-squared	0.001	0.002	0.026	0.000	0.033

Note: Models estimated via landlord FE with LPM; standard errors in parentheses; ***, **, and * denote that the corresponding coefficients are statistically significant at the 1%, 5% and 10% level respectively. Number of observations=245, with 137 owner-operated plots and 108 rented-out plots.

Table A6: Robustness checks: factors affecting plot-level input use (compare to table 4)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	# times weeded	1= applied herbicide	Kg of inorganic fert	1= hybrid maize	# times weeded	1= applied herbicide	Kg of inorganic fert	1= hybrid maize	# times weeded	1= applied herbicide	Kg of inorganic fert	1= hybrid maize
=1 if plot rented in & cultivated by tenant $\hat{\beta}_1$	-0.04 (0.075)	0.11*** (0.040)	77.57*** (16.696)	0.00 (0.039)	-0.07 (0.077)	0.09*** (0.031)	68.14*** (17.006)	-0.02 (0.038)	-0.04 (0.113)	0.07 (0.047)	70.41*** (23.649)	0.08 (0.052)
=1 if plot owned & cultivated by tenant $\hat{\beta}_2$	-0.10 (0.082)	0.14*** (0.034)	83.73*** (16.947)	0.10** (0.040)	-0.07 (0.084)	0.12*** (0.032)	80.20*** (16.738)	0.08** (0.039)	-0.07 (0.112)	0.09* (0.051)	75.15*** (22.653)	0.15*** (0.049)
education of household head in years of schooling									0.00 (0.010)	-0.01 (0.004)	1.74 (2.224)	0.00 (0.004)
area owned by household pre land renting, in Ha									-0.02 (0.027)	0.01 (0.021)	6.52 (6.740)	0.05*** (0.016)
number of members in hh									0.02 (0.018)	-0.00 (0.009)	0.15 (3.163)	0.01 (0.009)
=1 if HH head is female									0.15 (0.140)	0.02 (0.046)	15.12 (22.537)	-0.03 (0.058)
age of household head in years									-0.01** (0.003)	0.00 (0.001)	-0.46 (0.559)	-0.00 (0.001)
Savings in USD									0.00 (0.000)	-0.00 (0.000)	0.01 (0.024)	0.00 (0.000)
Value of assets in USD									-0.00 (0.000)	-0.00 (0.000)	0.00*** (0.001)	-0.00*** (0.000)
number of plots cultivated by household									-0.04** (0.016)	0.04*** (0.011)	-0.41 (4.338)	-0.02** (0.008)
Plot distance from house (walking minutes)									0.00 (0.001)	0.00 (0.001)	0.63* (0.352)	0.00 (0.001)
=1 if member of household is in a village savings and loan association									-0.06 (0.077)	-0.02 (0.037)	2.68 (15.515)	-0.05 (0.035)
Distance to the nearest agricultural extension officer from residence (walking min)									0.00** (0.000)	0.00 (0.000)	0.01 (0.060)	0.00* (0.000)
$\hat{\beta}_1 - \hat{\beta}_2 = 0$	0.06 (0.067)	-0.03 (0.039)	-6.15 (18.457)	-0.10** (0.042)	-0.004 (0.071)	-0.03 (0.026)	-12.06 (18.894)	-0.10** (0.041)	0.03 (0.068)	-0.023 (0.030)	-4.740 (18.001)	-0.063 (0.043)
Rental-pair fixed effects	No	No	No	No	Yes	Yes	Yes	Yes	No	No	No	No
Observations	948	948	948	948	948	948	948	948	948	948	948	948
R-squared	0.023	0.195	0.112	0.016	0.007	0.050	0.034	0.009	0.055	0.262	0.123	0.049

Table A7: Robustness checks: factors affecting plot-level soil fertility investments (compare to table 5)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	1=inter-cropped	1=animal manure	1=green compost	1= min tillage	1=inter-cropped	1=animal manure	1=green compost	1= min tillage	1=inter-cropped	1=animal manure	1=green compost	1= min tillage
=1 if plot rented in & cultivated by tenant $\hat{\beta}_1$	-0.02 (0.030)	-0.08** (0.033)	-0.08*** (0.023)	-0.08** (0.030)	-0.01 (0.032)	-0.09*** (0.033)	-0.07*** (0.023)	-0.08** (0.030)	0.04 (0.042)	-0.06 (0.040)	-0.13*** (0.031)	-0.07* (0.039)
=1 if plot owned & cultivated by tenant $\hat{\beta}_2$	-0.02 (0.034)	0.04 (0.042)	-0.05* (0.027)	0.00 (0.037)	0.02 (0.032)	0.03 (0.038)	-0.03 (0.027)	-0.02 (0.034)	0.04 (0.039)	0.05 (0.047)	-0.09** (0.034)	-0.01 (0.040)
education of household head in years of Schooling									-0.01 (0.004)	-0.00 (0.004)	-0.00 (0.003)	0.00 (0.003)
area owned by household pre-land renting, in Ha									-0.00 (0.013)	0.01 (0.015)	-0.03*** (0.008)	0.02 (0.014)
number of members in household									0.01* (0.007)	0.00 (0.007)	-0.00 (0.005)	0.01 (0.007)
=1 if HH head is female									-0.06 (0.052)	-0.07 (0.047)	-0.08** (0.037)	-0.04 (0.038)
age of household head in years									0.00 (0.001)	0.00 (0.001)	0.00* (0.001)	0.00* (0.001)
savings in USD									-0.00 (0.000)	0.00 (0.000)	0.00 (0.000)	0.00 (0.000)
value of assets in USD									0.00 (0.000)	-0.00*** (0.000)	0.00** (0.000)	-0.00 (0.000)
number of plots cultivated by household									-0.03*** (0.009)	0.00 (0.009)	0.01 (0.006)	0.01 (0.008)
plot distance from house (walking minutes)									-0.00 (0.001)	0.00 (0.001)	-0.00 (0.000)	-0.00 (0.000)
=1 if member of household is in a village savings and loan association									0.03 (0.033)	0.02 (0.034)	-0.02 (0.028)	0.01 (0.030)
distance to the nearest agricultural extension officer from residence (walking min)									-0.00 (0.000)	0.00** (0.000)	0.00** (0.000)	0.00 (0.000)
$\hat{\beta}_1 - \hat{\beta}_2 = 0$	-0.01 (0.028)	-0.12*** (0.036)	-0.04 (0.023)	-0.08*** (0.028)	-0.03 (0.028)	-0.11*** (0.035)	-0.04* (0.022)	-0.06** (0.026)	0.003 (0.029)	-0.11*** (0.033)	-0.05** (0.022)	-0.06** (0.027)
rental-pair fixed effects	No	No	No	No	Yes	Yes	Yes	Yes	No	No	No	No
R-squared	0.141	0.035	0.069	0.031	0.001	0.022	0.024	0.021	0.184	0.049	0.100	0.066
Observations	948	948	948	948	948	948	948	948	948	948	948	948

Table A8: Robustness checks: factors affecting which plot the landlord decides to rent out (compare to table 6)

Dependent variable =1 if plot rented-out, =0 if owner-cultivated	(1)	(2)	(3)	(4)	(5)
=1 if landlord views soil as good or very good	0.03 (0.050)				0.03 (0.050)
=1 if topsoil is acidic (<5.2 pH) in topsoil		-0.06 (0.079)			-0.08 (0.075)
organic matter (%) in topsoil		-0.03 (0.023)			-0.03 (0.024)
phosphorus (ppm) in topsoil		0.00 (0.001)			0.00 (0.001)
fruit trees on the plot			-0.19*** (0.058)		-0.20*** (0.060)
=1 if landlord perceives someone likely to challenge tenure status of plot				0.09 (0.099)	0.07 (0.098)
landlord fixed effects	No	No	No	No	No
R-squared	0.001	0.009	0.033	0.003	0.048
observations	245	245	245	245	245