

“Enhancing Productivity, Income and Market Access of Rural Producers in Africa:

The Case of Contract Farming in Nigeria”,

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Comments by Chris Udry

- Great project, interesting paper, fascinating results.
- Goal is to see how contract farming affects profits and incomes of small-scale producers in Nigeria
 - Rice, Soybean, Tobacco
 - Compare incomes of contract farmers vs. non-contract farmers
 - Careful to note standard evaluation problem: contract farmers may be different from non-contract farmers in both observable and non-observable ways. Hence, how can we tell if the differences in income are due to the contract, or due to these other differences?
 - Solution here: standard maximum likelihood selection correction

3 comments; 2 about organization/presentation, 1 about 'identification'

1. Data need to be treated consistently, and justified

2. Focus: what do we need to know about contract farming in Nigeria?

3. "Land available"

Data

2.1 needs more richness. It implies no data on family labour, but you seem to have it. No definitions of key variables like household income, should have descriptive stats.

Discuss key differences.

Comparison of Profitability Among Rice Farmers in Nigeria

	Non-Contract Rice Farmers	Rice Contract Farmers	All Farmers	t-test of difference	
				t-statistic	Prob> t
Rice price N/kg					
Value of output (N)	154,664	136,925	145,794	0.85	0.39
Variable cost (N)	28,198	39,598	33,898	-4.02	0.00***
Gross margin (N)	126,466	97,327	111,896	1.43	0.15
Fixed cost (N)	4,785	13,972	9,378	-3.22	0.00***
Net profit (N)	121,680	83,354	102,517	1.91	0.05**
Income per capita(N)	24,714	21,069	22,892	0.70	0.48
Value of rice (N)	92,570	123,107	107,838	-1.55	0.12
Variable cost for rice (N)	14,511	30,724	22,618	-5.60	0.00***
Rice gross margin per farm (N)	58,039	78,779	68,409	-1.08	0.28
Fixed cost for rice production (N)	3,050	11,349	7,200	-3.57	0.00***
Rice net profit per farm (N)	54,988	67,429	61,208	-0.66	0.50
Rice income per capita (N)	11,180	16,558	13,869	-1.19	0.23
Rice gross margin (N/kg)	27.44	22.07	24.76	2.30	0.02**
Rice gross margin (N/ha)	50,204	69,589	59,897	-1.03	0.30
Rice net profit (N/kg)	26.09	17.93	22.01	3.49	0.00***
Rice net profit (N/ha)	47,262	59982	53,622	-0.69	0.48

Focus

Need a laser on telling the story of the paper

Much of section 3 is a fascinating discussion of contracting institutions. Most is unnecessary. And it is missing the key discussion of selection.

Selection comes much later (pp. 22-23).

Another example: “increased agricultural production is necessary to tackle starvation and malnutrition, and rapid growth in agricultural production and productivity is a precondition for economic take-off...”

Tobacco does not belong at all

“Land Available”

Idea of model:

$$y = X\beta + \alpha c + \varepsilon$$

is income per capita. But, c may be correlated with ε .

$$\begin{aligned}c^* &= X\delta + Z\gamma + v \\c &= 1 \text{ if } c^* > 0 \\ &0 \text{ otherwise}\end{aligned}$$

Z is the essential ingredient for credibility.

$$y = X\beta + \alpha c + \varepsilon$$

$$c^* = X\delta + v$$

$$c = 1 \text{ if } c^* > 0$$

0 otherwise

$$y = X\beta + \alpha(X\delta + v) + \varepsilon$$

$$y = X(\beta + \alpha\delta) + \varepsilon + \alpha v$$

Treatment Effects Model of Per Capita Income of Rice Farmers

Variable	Coefficient	S.E.	P[Z >z]
Selection Equation			
Dependent Variable: Conpart			
Age of head	0.085***	0.024	0.00
Household size	-0.098	0.086	0.25
Education of head	0.001	0.045	0.98
Crop mix	0.274*	0.149	0.06
Farm size	0.468	0.375	0.21
Land available	-0.982***	0.203	0.00
Constant	-1.855	1.234	0.13
Outcome Equation			
Dependent Variable: Per Capita Income			
Age of head	16.10	378.34	0.96
Household size	-2,769.12**	1,188.00	0.02
Education of head	-127.84	643.47	0.84
Crop mix	3,259.67*	2,022.73	0.10
Farm size	5,463.71	5,316.92	0.30
Conpart	13,957.30**	6,082.39	0.02
Constant	8,126.24	17,072.12	0.63
ath(rho)	-0.43***	0.16	0.00

What is “Land Available”? Does it belong in X ?

Table 3.12
Treatment Effects Model of Per Capita Income of Soybean Farmers

Variable	Coefficient	S.E.	P[Z >z]
Selection Equation			
Dependent Variable: Conpart			
Age of head	0.031	0.026	0.24
Household size	-0.271*	0.167	0.10*
Education of head	-0.0006	0.032	0.98
Farm size	0.256*	0.149	0.08*
Land available	-0.013	0.012	0.26
Constant	-0.771	1.609	0.63
Outcome Equation			
Dependent Variable: Per Capita Income			
Age of head	286.2875	402.56	0.47
Household size	-13,878.76***	3,785.64	0.00***
Education of head	761.14	629.52	0.22
Farm size	18,288.42***	2,721.94	0.00***
Conpart	-33,968.13*	18,419.46	0.06*
Constant	64,079.58**	31,130.43	0.04**
ath(rho)	1.229	0.862	0.15
Log likelihood = -709.06			
LR chi2(9) = 67.06			
Prob > Chi2 = 0.00			
LR test of independent equations: (rho=0)			
Chi2(1) = 1.69			
Prob > Chi2 = 0.19			
Number of obs = 60			