

Is contract farming in the Indonesian oil palm industry pro-poor?

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Is Contract Farming in the Indonesian Oil Palm Industry Pro-poor?

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Introduction

- In order to increase participation of the poor on oil palm development the government has enforced contract farming. Now, about 40 % of total oil palm area are owned by smallholders either independently or under contract with companies (MoA 2010)
- There is a debate on pros and cons of the impact of contract farming (Glover, 1984) in the oil palm industry (Rist et al, 2010)

Objectives

- To assess the effect of contract farming on oil palm smallholders' well-being.
- To analyze the implication of contract farming in the oil palm industry for poverty reduction

Methodology

Data collection

Data were collected randomly from 245 smallholders (126 contract and 119 non-contract smallholders) in the District of Merangin, Province of Jambi Indonesia.

Model

$$Y_h = \alpha X_h + \delta P_h + \mu_h$$

$$P_h^* = \beta Z_h + \varepsilon_h$$

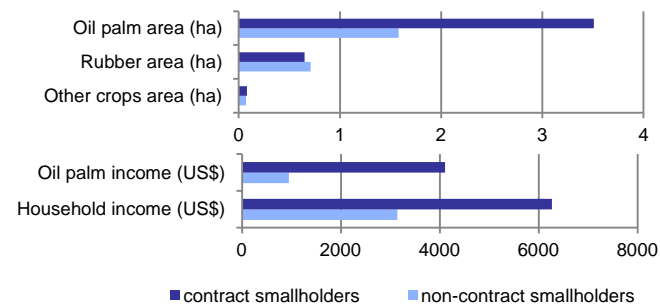
$$P_h = 1 \text{ if } P_h^* > 0, \text{ otherwise } 0$$

Y_h = net household income
 X_h = Household characteristics
 P_h = dummy of participation
 Z_h = covariates of participation
 μ_h = error term of household income
 ε_h = error term of participation

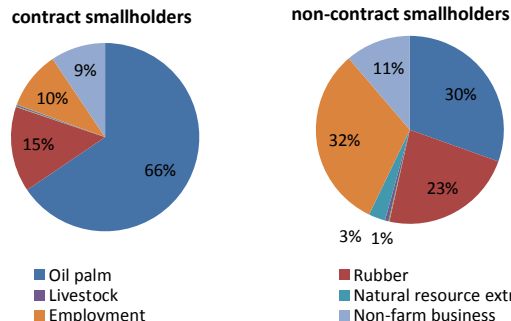
Endogeneity exists if μ_h and ε_h are correlated. A treatment effect model is employed in order to deal with the endogeneity.

Results

Comparison of household characteristics



Comparison of income portfolio



Comparison of poverty headcount

| Contract smallholders | Non-contract smallholders | Total |
|-----------------------|---------------------------|-------|
| 23,0 % | 49,6 % | 35,9% |

Note: *Calculated using the US \$ 2 consumption poverty line (PPP)

Econometric Results

| Variable | Model 1 | | Model 2 | |
|------------------------------|--|---------------------------------|---------------------------------|---------------------------------|
| | 1 st stage Participation | 2 nd stage Income | 2 nd stage Income | 2 nd stage Income |
| Age of husehold head | 0.03** | 0.04** | 0.04 | 0.02 |
| Age square of household head | | -0.00** | -0.00 | -0.00 |
| Household size | 0.07 | 0.07*** | 0.07 | 0.09*** |
| Ratio of potential labor | 0.68 | -0.16 | -0.23 | -0.18 |
| Education of household head | 0.01 | -0.01 | -0.04* | -0.01 |
| Allocated land | -0.29 | -0.05 | -0.21 | 0.03 |
| Social capital | -0.01 | 0.01** | 0.01* | 0.01* |
| Origin dummy | -1.11** | | | |
| Size of oil palm area | 0.29*** | 0.16*** | 0.29*** | 0.14*** |
| Size of rubber area | -0.03 | 0.07*** | 0.11** | 0.05* |
| Size of other crop area | -0.01 | 0.07 | -1.08** | 0.10 |
| Age of oil palm | | 0.02 | 0.03 | -0.00 |
| Age square of oil palm | | -0.00 | 0.00 | -0.00 |
| Off-farm | -0.33 | 0.31*** | 0.28 | 0.36*** |
| Planted in 1989-1994 | 3.26*** | | | |
| Planted in 1995-2000 | 1.63*** | | | |
| PARTICIPATION | | 0.47* | -0.86* | 0.63** |
| Constanta | -3.44*** | 8.19*** | 8.05 | 8.74*** |
| Lambda | | -0.12 | 0.63** | -0.19 |
| No. of observation | 245 | 245 | 88 | 157 |

Note: * p < 10 % , ** p < 5 % , *** p < 1 % . Source: own calculation

Discussion

- Contract smallholders appear to be wealthier than non-contract smallholders.
- Participation in a contract can be explained by the age of household head, origin (migrant or indigenous), size of oil palm plot, and time of plantation establishment.
- Overall, contract farming in the oil palm industry has a positive impact on smallholders' income.
- Running a separate model for poor and non-poor group underlines the equity effect of contract participation. A significantly positive income effect can be shown for the non-poor group only.
- Poorer smallholders tend to lose from contract farming. They might be less able to apply input in the required manner and often cannot meet the strict credit repayment scheme.
- Propensity score matching was also applied, however the results are sensitive to hidden bias.
- Policy makers should review the contractual schemes and encourage oil palm companies to offer suitable contract terms for poor smallholders.

References

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