

Investments in Agriculture: The Future for Small Scale Farming in Northeast Thailand?

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Background

- Thailand faces a large rural urban divide, the typical “agricultural problem in high performing Asian Economies” (Hayami, 2007, p.1).
- Rural households increasingly depend on remittances from migration.
- The village population tends to be over-aged with low levels of education as compared to migrants.
- Rural households hold on to their land as buffer to shocks.
- Structural change in agriculture to larger and more efficient farms might be impaired.

Research Questions

- What factors encourage rural households to invest in different types of productive assets?
- What are the constraints to such investments?
- What factors influence the extent of investments in agricultural activities?

Data

- Three year household panel data set (2007, 2008, 2010)*.
- 2200 households in three provinces in Northeast Thailand.
- Comprehensive questionnaire on vulnerability to poverty including a module on investment.

Descriptive Results

Table 1: Household investment behavior, 2007 -2010

HHS with	Freq.	Percent
Agricultural investments	524	24.89
Enterprise investments	142	6.75
Agricultural and enterprise investments	65	3.09
No investments	1,374	65.27
Total	2,105	100

Methodology

Model

(1) Estimate determinants for different investment types:

➤ Multinomial probit model

Compares HHS with agricultural investments, small scale enterprise investments, both investments, no investments (2007 – 2010)

(2) Estimate determinants for the decision to invest in agriculture and for the amount of investment

Investments are distributed with an excess of zeros; infrequent and lumpy.

➤ Double Hurdle Model

Dependent variable: Agricultural investments, accumulated 2007 -2010 (log PPP- $\text{\$}$)

Selected Empirical Results

Table 2: Model (1): Determinants of different investment types: Multinomial Probit Model

	Agricultural investments	Enterprise investments	Agricultural and enterprise investments
HH size (no. of persons)	0.121***	0.066	0.138**
Age HHH (years)	-0.009**	-0.020***	-0.014*
Female HHH (1= yes)	-0.237**	-0.040	-0.127
Education HHH (years)	0.016	-0.005	0.049*
HH has crops (1= yes)	0.261**	0.126	0.631***
HH has livestock (1= yes)	0.267***	0.091	0.305*
HH has own SSE (1= yes)	-0.224*	0.396***	0.484***
HH has wage job (1= yes)	-0.250***	-0.268**	-0.013
Persons working in SSE	-0.200**	0.180*	0.098
Income pc (log PPP- $\text{\$}$)	0.342**	0.384	0.164
Land size pc (ha)	0.095**	-0.210**	0.002
Asset value pc (log PPP- $\text{\$}$)	0.144***	0.146**	0.387***
Loan (PPP- $\text{\$}$)	-0.003	0.081***	0.051
Credit rationing (1= yes)	-0.084	-0.710***	-0.076
Investment village (07-10)	0.000**	0.000*	0.000***
Village size (no. of HH)	-0.000	-0.002**	-0.003**
Distance to town (km)	-0.013**	-0.011	0.005
_cons	-3.792***	-4.456***	-6.622***
N	2050		
Log likelihood	-1643.5		

Note: Base outcome: no investment. Only significant variables are reported. Province dummies are significant, but not reported. SSE: small scale enterprise.

* p<0.1, ** p<0.05, *** p<0.01. Data is from 2007 unless otherwise noted.

- Asset value** positively influences all types of productive assets.
- HHS with larger **landholdings** tend to invest more often in agriculture and less often in enterprises.
- Households tend to specialize: negative influence of **wage employment** on agricultural and enterprise investments, and of **self employment** on agricultural investments.
- Access to **finance** increases the probability of investing in small scale enterprises.
- Remoteness** of villages is a constraint to agricultural investments
- Investment level** in the village has a positive influence: investments cluster in certain villages

Results from Model (2): Double Hurdle Model:

- HHS undertaking large agricultural investments are characterised by high asset value, large landholdings, savings and an educated household head.

Conclusions

- Interventions are needed to facilitate structural change and allow agriculturally oriented farms to grow and modernize.
- Income gap in rural areas could rise.