Tradeoff between Farm Profitability and the Desire for Market Work:
An Empirical Analysis of Chinese Farm Households

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Introduction

● Income growth of Chinese farm households is slow partly because their reallocation between on-farm and off-farm work hours is slow.

Evidence from Chinese Household Income Project survey (Li, 2002)

Objectives of this study

This study proposes and tests empirical methods to examine tradeoff between farm profitability and off-farm work. The study was conducted in the Western region, where off-farm work is common and no incentive for market work is found in the Eastern region.

Theoretical Analysis

A small agricultural household model

A farm household is assumed to maximize its utility function (C, t, x) (C: total household consumption, t: the head’s leisure hours, x: household characteristics) subject to the following constraints.

Budget constraint

\[ \sum_{i=1}^{s} p_i x_i + \sum_{j=1}^{v} v_i y_j = w(1-t) \]

Time constraint of the head

\[ T = L + M + F \]

Farm production function

\[ X = f(L, F, x_i) \]

Data


● Data from households with married male heads

● 22 provinces are covered

Definition of major variables and results of the theoretical analysis

Desire for market work:

\[ M^* = \begin{cases} 1 & \text{if } \beta_1 M + \beta_2 Q + \beta_3 V + \beta_4 w > \beta_5 \\ 0 & \text{otherwise} \end{cases} \]

Firm profitability:

\[ R = a \times Q / V \]

Empirical analysis

● Simultaneous equations of farm profitability and the desire for wage work

\[ \ln R = \alpha_1 + \alpha_2 w + \alpha_3 K + \alpha_4 L + \alpha_5 T \]

\[ M^* = \begin{cases} 1 & \text{if } \beta_1 M + \beta_2 Q + \beta_3 V + \beta_4 w > \beta_5 \\ 0 & \text{otherwise} \end{cases} \]

Main empirical results

Effect of M on lnR

\[ M = 0 \rightarrow \begin{cases} \text{Positive effect} & (0.4) \\text{Negative effect} & (0.3) \end{cases} \]

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Comparison of the model with “globally (non-)separable model”

We can show a advantage of the LS model over the GS model by graphically comparing effects of M on R for the Western region. The figure below shows the LS model can trace the switching patterns of the “interval average” of farm profitability for the Western region, whereas the GS model cannot.

Conclusions

In the simple agricultural household model, tradeoff between farm profitability and the desire for market work for Chinese farmers can be explained by showing the puzzle addressed by some researchers. coexistence of low farm profitability and high desire for market work.

References


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