Credit Constraint and Non-separable Behavior of Rural Households — Evidence from China

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INTRODUCTION

Rural households are both producers and consumers. Under perfect markets, farm households arrange their production and consumption independently as both profit-maximizing producer and utility-maximizing consumer, we say that **separability** is hold.

Previous studies test for the separability by centering on the imperfect labor market. However, non-separability could result from any market failure. With the development of rural factor markets, rural capital market imperfections have outweighed the labor market inefficiency.

Exploring the separability of rural households, embedded in the capital market failure, and from the perspective of farm production variable inputs would be a new attempt.

MODEL

Theoretical Framework

To conceptualize the impact of credit constraint on farm household consumption, we draw from the well-developed theoretical literature on neoclassical producer-consumer models (Singh and Squire et al., 1986; Petrick, 2004; Briggeman and Towe et al., 2009), and derive that when farm inputs↑,

Farm consumption could ↓or → or ↓.

Credit constraints include: quantity rationing, transaction cost rationing, and risk rationing.

Econometric Estimation with Switching Regression Model

selection equation,

$$CR_i = \begin{cases} 1 & if \quad CR_i^* > 0 \\ 0 & if \quad CR_i^* \le 0 \end{cases} \quad \text{and} \quad CR_i^* = \beta X_i + \mu_i$$

outcome equation,

$$E_i = \begin{cases} E_i^C = r^C Z_i + \varepsilon_i^C, & if \quad CR_i = 1 \\ E_i^U = r^U Z_i + \varepsilon_i^U, & if \quad CR_i = 0 \end{cases}$$

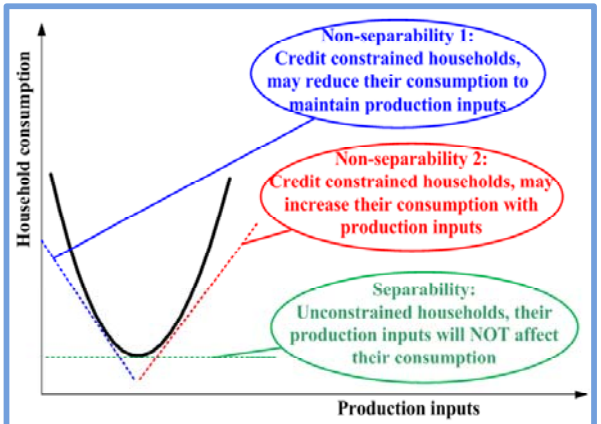
$CR_i = 1$, credit constrained farms, $CR_i = 0$, unconstrained
E_i^C consumption expenditure from credit constrained farms
E_i^U consumption expenditure from unconstrained farms
Z_i control variables affecting consumption expenditure
μ_i, ε_i^C and ε_i^U error terms follow three-normal distribution

EMPIRICAL RESULTS

Variable	Probit	Overall Consumption	
		Unconstrained	constrained
Family size	—	0.050**	0.001
Age	0.045	0.055**	0.080**
Age²	-0.001	-0.001**	-0.001**
Sex	-0.263	-0.110	-0.256
Education	0.007	0.010	0.020
Burden ratio	-0.080	0.405**	0.452*
Log(NetInc)	-0.053	0.505***	0.266***
Log(ProdCost)	—	0.172	-0.901**
Log(ProdCost)²	—	-0.004	0.056**
Log(ProdAsset)	0.004	—	—
Home Property	-0.059**	—	—
Land (mu)	0.007*	—	—
RCC membership	-0.146*	—	—
Deposits	-0.281***	—	—

	Necessary consumption		Luxury consumption	
	Unconstrained	Constrained	Unconstrained	Constrained
Family size	0.055**	0.011	0.050	-0.009
Age	0.052**	0.115**	0.078**	-0.068
Age²	-0.001**	-0.001**	-0.001**	0.001
Sex	-0.107	-0.323	-0.331	-0.258*
Education	0.002	0.014	0.040**	0.034
Burden ratio	0.519**	0.454	-0.337	-0.069
Log(NetInc)	0.447***	0.258**	0.542***	0.761***
Log(PrdCost)	0.120	-0.567	0.124	-1.262*
Log(PrdCost)²	-0.002	0.035	0.004	0.081*

CENTRAL CONCLUSTION



Credit constraint farms: overall consumption has a U-shaped relationship with their production inputs
Unconstrained farms: overall consumption does NOT affected by their production inputs

Necessary and luxury consumption

The luxury expenditure also has a U-shaped relationship with farm production inputs;

The necessary consumption: separability is hold for both credit constrained and unconstrained farms.

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RESEARSH QUESTIOINS

Test whether farm consumption and production can be separable, under imperfect capital market?

1) Derive new conceptual framework to address the separability issue in the context of imperfect capital market; **2)** Test the separability hypothesis by examining effects on farm household consumption from their production inputs, for both credit constrained and unconstrained farm families in rural China

IMPLICATION

1) Imperfect capital market can be another channel to test separable decisions on farm production and their living consumption. Imperfect capital market results non-separable behavior for credit constrained farms, the separability is held for unconstrained farms.

2) Policy advisors should be cautious when evaluating the potential impact of their policies relying on the assumption of efficient capital markets.

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