



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Loan Allocation within Group Lending: New Evidence from Self-Help Group Program in South India

Jun Goto

Department of Agricultural and Resource Economics

University of Tokyo, Japan

Email: aa097079@mail.ecc.u-tokyo.ac.jp

Poster prepared for presentation at the Agricultural & Applied Economics Association's 2010 AAEA, CAES & WAEA Joint Annual Meeting, Denver, Colorado, July 25-27, 2010.

Copyright 2010 by Jun Goto. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided this copyright notice appears on all such copies.

Loan Allocation within Group Lending: New Evidence from Self-Help Group Program in South India

Jun Goto

Department of Agricultural and Resource Economics, University of Tokyo

Introduction

Background

• Microfinance (MF) has attracted growing attention as a means of improving financial access. Reflecting the enthusiasm about it, Government of India has initiated the biggest MF program since 1992.

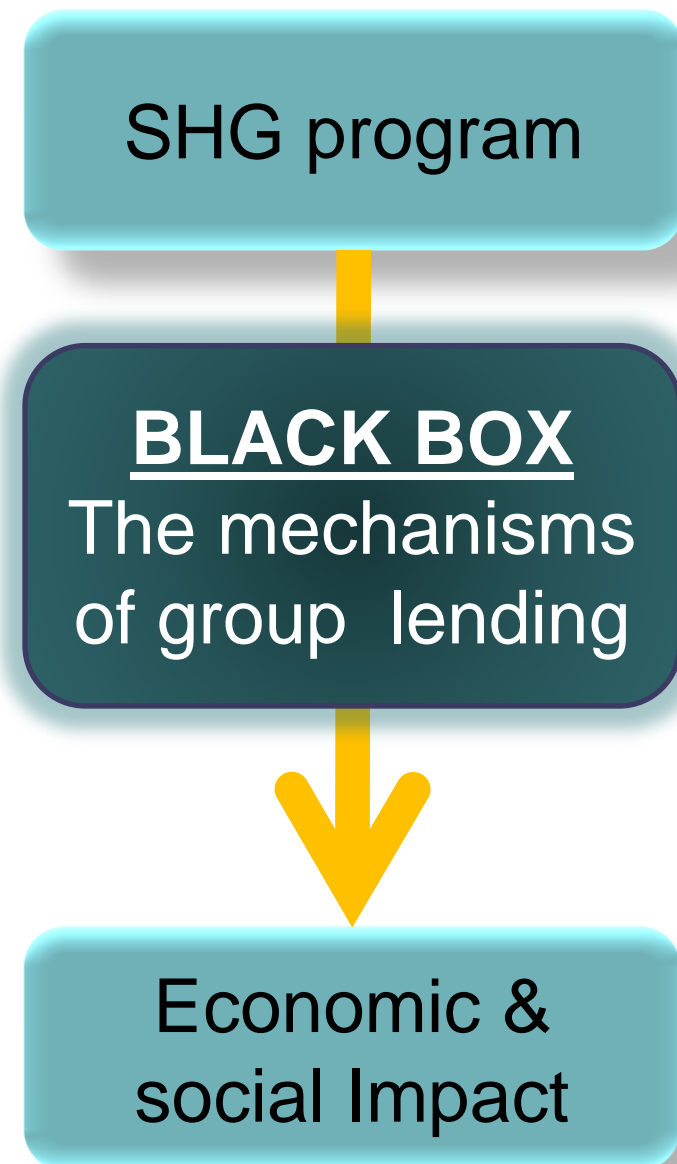
• This program adopts a group lending methodology with joint liability based on Self-Help Group (SHG) in which microloans are designed to be allocated among members by themselves.

Motivation

• Despite the proliferation of impact evaluation studies on MF, few studies shed light on loan allocation or actual credit access.

• There exists a black box which contains several questions. How do members allocate microloan within a group? Does there still exist credit rationing among participants caused by this loan allocation?

• This paper empirically explores these question. The objective is to clarify the determinants of loan allocation and credit access within group lending, using original data collected in Kerala, South India.



The Scheme of SHG program

Formation of SHGs

• One SHG is composed by 10-20 women who can be selected based on geographical proximity.
→ self selection, heterogeneity in a group

Financial Transactions

• Members are obligated to hold weekly meetings for collecting compulsory savings (10-50 Rs/meeting). And there are two types of loan: the internal loan and the external loan. The internal loan comes from their own accounts accumulated by compulsory savings, while the external loan is disbursed by the formal bank to a group.

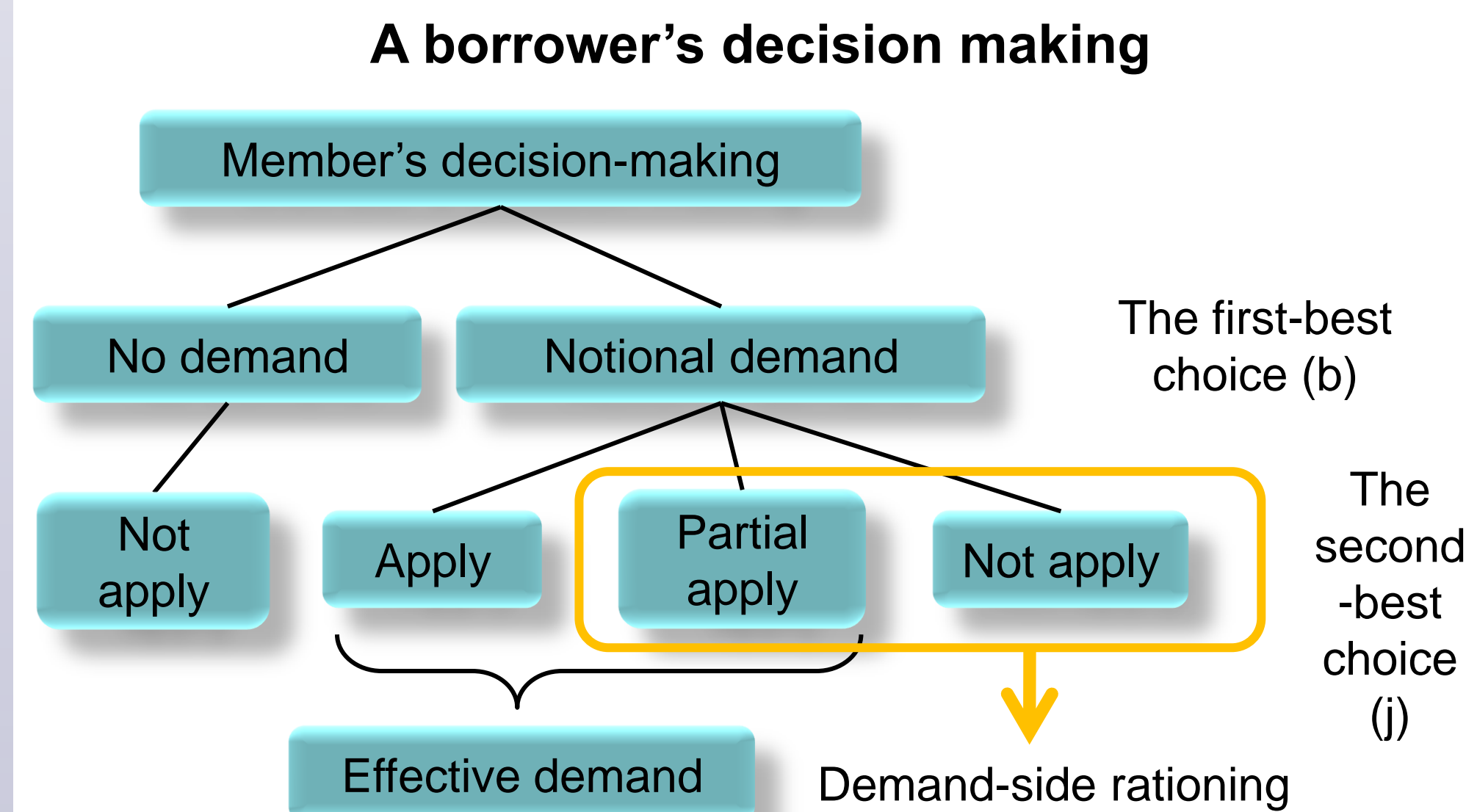
• The interest rate, the repayment schedule, and loan allocation are determined by members.

• The external loan can't be available without repayments of previous loans. Thus only in a beginning of loan cycle can they apply and issue the external loan to members.

• Note that loans are taken from banks in the group's name but each of the members conducts her business individually.

Econometric Framework

• The interaction between a applicant and other members may be modeled as a sequential two-stage decision process (Zeller [1994]WD, Mushinski [1999]JDS).



• Nested logit model (*apply, partial apply, not apply*)
The joint probability of choosing alternative j_b can be written as

$$\text{Prob}[second_j, first_b] = P_{ijb} = P_{ijb} \times P_b$$

This probability can be written as

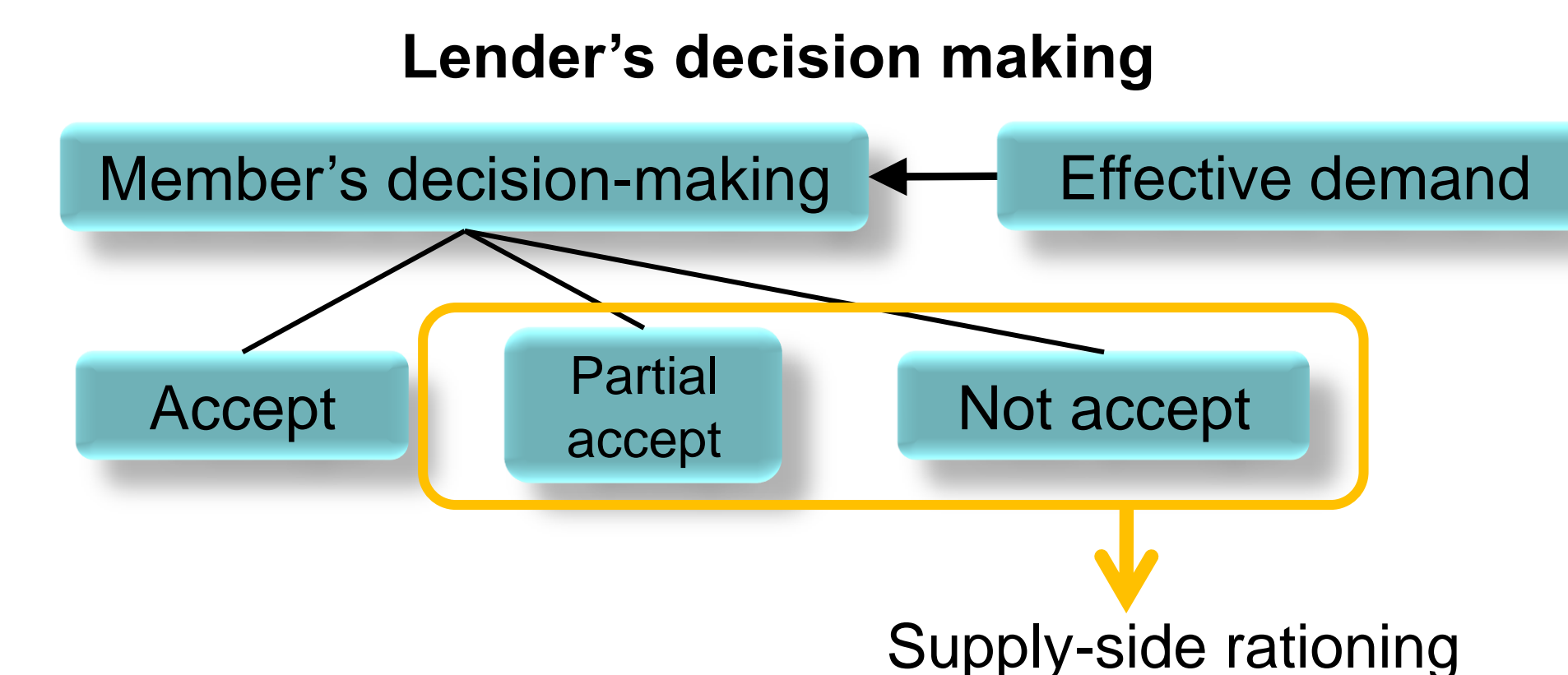
$$P_{ijb} P_b = \left(\frac{\exp(\mathbf{x}'_{ijb} \boldsymbol{\beta})}{\sum_{j=1}^{J_b} \exp(\mathbf{x}'_{ijb} \boldsymbol{\beta})} \right) \left(\frac{\exp[\boldsymbol{\tau}_b(\mathbf{z}'_{ib} \boldsymbol{\gamma} + I_{ib})]}{\sum_{b=1}^B \exp[\boldsymbol{\tau}_b(\mathbf{z}'_{ib} \boldsymbol{\gamma} + I_{ib})]} \right)$$

where $I_{ib} = \ln \left(\sum_{j=1}^{J_b} \exp(\mathbf{x}'_{ijb} \boldsymbol{\beta}) \right)$

This term is the inclusive value in the first-best choice.

• \mathbf{z} is a vector of observed attributes that vary across the first-best strategies.

• \mathbf{x} is a vector of observed attributes that vary across the second-best strategies; factors related to information asymmetries, bargaining power, characteristics of other applicants.



• Multinomial logit Model
(*accept, partial accept, not accept*)

$$\text{Pr}(Y_i = l) = \left(\frac{\exp(\mathbf{w}'_{il} \boldsymbol{\theta})}{\sum_{l=1}^L \exp(\mathbf{w}'_{il} \boldsymbol{\theta})} \right)$$

Data Collection and Survey Area

The Data

- The data: 220 households (SHG members) in Sultan Battery gram panchayat, Wayanad district, Kerala, gathered between Aug and Oct 2008.
- Questionnaire: family compositions and labor market participation, landholdings, fixed assets, annual income, credit transactions, gift exchange, and social network etc.
- Note that we also collected the above information on other members who applied in a same loan cycle recorded in financial books of each SHG.

How to identify credit rationing

(almost same method with Boucher, Guirkinger, and Trivelli [2009] EDCC)

- Whether had you applied for a loan in 12 month? If no, why had you not done so? If yes, would you want to applied for another loan? (→ *apply, partial apply, not apply, no demand*)
- Whether any applications were approved? If yes, had your applications been partially accepted? (→ *accept, partial accept, not accepted*)

(A subset of) Estimation Results

Nested multinomial logit model borrower's decision making					Multinomial logit model for lender's decision making				
External loan	Partial applying		Not applying		External loan	Partial accept		Not accept	
	Coef.	Z-value	Coef.	Z-value		Coef.	Z-value	Coef.	Z-value
Constant	-1.436	-1.6928	-1.625	-1.913	Applicant				
Applicant					Effective demand for loan	-0.567	-0.4537	-0.079	-2.6243
Permanent income	-0.3505	-2.9719	-0.7371	-3.7746	Permanent income	-0.007	-0.4201	-0.402	-3.5782
Transitory income	0.0117	1.4995	0.5626	1.6775	Transitory income	0.012	0.7038	-0.001	-0.923
Dummy for past default	0.3275	1.2205	0.8322	3.0409	Dummy for past default	0.228	0.117	0.221	0.601
Landholdings	0.1861	0.106	0.0857	0.9042	Landholdings	0.211	2.1645	0.281	1.3213
Fixed asset	1.7476	0.4996	2.5098	0.1959	Fixed asset	0.029	2.6789	0.019	1.1889
Savings in SHG	0.0439	0.2305	0.1951	0.1305	Savings in SHG	-0.151	-3.3414	-0.1439	-0.2305
Social position in village	0.7638	2.2634	0.2807	1.2352	Social position in village	0.46	2.5134	0.862	1.4093
Social position in SHG	0.0007	2.4388	0.0008	2.9947	Social position in SHG	-0.566	-3.5415	-0.623	-2.9661
Distance from formal bank	0.6388	2.0188	0.7503	2.5913	Fixed effect for social caste	0.3275	-0.7038	1.0991	3.3322
Dummy for SC/ST	0.0006	2.513	0.0007	2.5699	Average of other applicant				
Average of other applicants					Effective demand for loan	0.3275	1.2205	0.3294	1.4018
Permanent income	0.006	0.9161	0.0505	0.0709	Permanent income	1.1861	4.06	1.0991	4.045
Transitory income	-0.8021	-2.8939	-0.6892	-3.0674	Transitory income	1.7476	3.4996	1.661	3.3322
Dummy for past default	0.0412	0.2062	0.1601	1.0849	Dummy for past default	-0.128	-3.117	-0.424	-4.101
Landholdings	-0.04	-2.8778	-1.0691	-0.1113	Landholdings	0.0007	2.4388	0.0006	2.513
Fixed asset	-1.1133	-0.2751	-1.1384	-0.4235	Fixed asset	-0.3284	-2.0701	-0.3046	-1.732
Savings in SHG	0.3399	2.5251	0.3379	2.4967	Savings in SHG	1.231	2.41	1.163	0.2305
Social position in village	0.5297	0.5175	0.4848	0.1136	Social position in village	0.2013	0.4537	0.906	0.9161
Social position in SHG	1.1038	4.0894	1.1064	3.4748	Social position in SHG	1.0505	3.4201	4.8021	2.8939
Fixed effects for SHGs					Fixed effect for SHGs				
σ	0.5767	0.2325	0.67	0.2178					
τ	0.7821	0.2903	0.9378	0.2982					

Conclusion

Conclusion

- The access to microcredit is not necessarily guaranteed for all of members in SHGs and loan is allocated in group lending with two types of credit rationing.
- This paper focuses on a bargaining process in loan allocation to clarify the determinants of both types of credit rationing.

- A potential borrower would be preliminary rationed by lack of creditworthiness, insufficient implicit collateral requirements, weak bargaining power, transaction costs and, urgent needs by others.
- There might be a selection based on creditworthiness, political distortion, and wealth bias in loan allocation.