Does an Access to Credit Help Households in Recovering Natural Disaster Losses? Experience from Bangladesh

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Outline of the Presentation

- ✓ Introduction
- ✓ Objective
- ✓ Econometric model
- ✓ Data
- ✓ Results
- ✓ Conclusion

Introduction

- ✓ Natural disasters increase poverty and deprivation of people of affected areas.
- ✓ Negative effects are not equal for all households.
- ✓ The negative effects on assets are relatively longer term and more acute for the lowest wealth group than other wealth groups in the society.
- ✓ Due to the natural disaster, some of the lower strata households fall into perpetual poverty traps without having a very little hope of escaping it.
- ✓ Besides other factors, the extent of recovery of lost assets also depends on the access to local markets, especially financial markets, and institutions.

Introduction

✓ If the markers are full and complete, all households have the same access to local markets and institutions.

✓ HHs can use loan and insurance contracts for coping with assets and income losses caused by the natural disasters.

✓ The loans and insurance contracts help households to rebuild their lost assets quickly.

✓ In developing countries, markets-especially credit and insurance markets-are not full and complete.

Introduction

✓ Formal sector credit and insurance markets are not available in many areas in developing countries, specially in Bangladesh.

✓ In absence of formal credit and insurance markets, households, particularly poor households, depend on informal credit and insurance markets for coping with natural disaster losses.

✓ Carter et. al. (2007) concludes that an access to capital markets helps households to recover asset losses significantly.

Objective

✓ This paper intends to examine how financial markets institutions, formal and informal, help households in rural areas of Bangladesh in recovering total asset and non-asset losses that incur from natural disasters.

Natural Disaster and Access to Credit

Econometric model

$$Miti_{ij} = \beta Access_j + \Sigma \varphi X_{ij} + \Sigma \delta Z_j + u_i$$

$$Miti_{ij} = \eta LOAN_{ij} + \varpi SLOAN_{ij} + \Sigma \varphi X_{ij} + \Sigma \delta Z_j + u_i$$

$$Miti_{ij} = \Sigma \vartheta LS_{ik} + \Sigma \varphi X_{ij} + \Sigma \delta Z_j + u_i$$

Where

$Miti_{ij}$ =	The extent of HH's disaster loss recovery;
$Access_j$ =	An access to credit;
Loan =	Amount of loan;
LS_{ij} =	Different loan sources;
X_i =	A vector of household socio-economic characteristics; and
Z_i =	A vector of village-level characteristics;

Data

✓ The analysis is based on a household-level survey of randomly selected two thousand six hundred and eighty (*N=2680*) households from 140 villages in different parts of the country.

✓ Besides information on natural disaster loss and recovery, and access to credit, the survey collected detailed information at the household as well as village level.

Natural Disaster and Access to Credit

Table 4: Summary Statistics

Variables	Definitions	Mean	S.D.
MITIGATION	Extent of household disaster loss mitigation	0.26	0.27
ACCESS	Dummy for Access to Credit; 1 for Access and 0 otherwise	0.39	-
LOAN	Total credit amount of a household in Taka	8936	37038
LOANCB	Total credit amount from commercial banks (in Taka)	2494	18488
LOANMFI	Total credit amount from MFIs (in Taka)	785	6874
LOANCBO	Total credit amount from CBOs (in Taka)	282	2648
LOANNGO	Total credit amount from NGOs (in Taka)	2713	19199
LOANML	Total credit amount from money lenders (in Taka)	1618	21285
LOANFF	Total credit amount from family and friends (in Taka)	761	8447
LOANSUPP	Total credit amount from suppliers for business (in Taka)	282	8124

Natural Disaster and Access to Credit

Results

Table 1.
Disaster Loss as % of total household assets
by socio-economic status of households

Socio-economic Class	No. of observations	Total non land household assets (in Taka)		Disaster loss (in Taka)		Loss as % of total assets
		Mean	S.D.	Mean	S.D.	
		(1)	(2)	(1)	(2)	(3)/(1)
Hardcore poor	1341	41,485 ($602)	87,376 ($1266)	23,548 ($341)	65,148 (944)	57%
Poor	808	71,287 ($1,033)	11,8201 ($1,713)	34,499 ($500)	61,183 ($887)	48%
Non-poor	489	221,357 ($3,208)	717,771 ($10,402)	49,372 ($716)	91,275 ($1,323)	22%

Natural Disaster and Access to Credit

Table 2
Disaster Loss recovery as % of total disaster loss by Socio-Economic
Status of Households

Socio-economic Class	No. of observations	Disaster loss (in Taka)		Loss recovery (in Taka)		Extent of loss recovery
		Mean	S.D.	Mean	S.D.	
		(1)	(2)	(3)	(4)	(3)/(1)
Hardcore poor	1341	23,548 ($341)	65,148 (944)	4,175 ($61)	10,262 ($149)	18%
Poor	808	34,499 ($500)	61,183 ($887)	5,780 ($84)	12,007 ($174)	17%
Non-poor	489	49,372 ($716)	91,275 ($1,323)	7,371 ($107)	17,780 ($258)	15%

Natural Disaster and Access to Credit

Table 3
Disaster Loss recovery as % of total disaster loss by disaster area

Area	No. of observations	Disaster loss		Loss recovery		Extent of loss recovery
		Mean	S.D.	Mean	S.D.	
		(1)	(2)	(3)	(4)	(3)/(1)
Non-disaster area	269	8,530 ($124)	77,817 (1,128)	1,862 ($27)	12,543 ($182)	22%
Disaster area-flood	1077	25,050 ($363)	24,405 ($354)	4,986 ($72)	9,207 ($133)	19%
Disaster area-Cyclone	1292	42,044 ($609)	68,266 ($989)	6,193 ($90)	13,037 ($189)	15%

Natural Disaster and Access to Credit

Table 5 & 6
OLS estimates of disaster loss recovery

Explanatory Variables	Dependent variable: extent of household disaster loss recovery	
	(1)	(2)
Access	0.06***	
Loan		6.69e-07***
SLoan		-8.74e-13***
Constant	0.111**	0.113**
Observations	2373	2373
R-squared	0.080	0.070

Natural Disaster and Access to Credit

Table 7

OLS estimates of disaster loss recovery

Explanatory Variables	Dependent variable: extent of household disaster loss recovery
	(3)
LOANCB	-6.71e-07
LOANMFI	3.67e-06*
LOANCBO	6.45e-06**
LOANNGO	1.35e-06*
LOANML	1.64e-06***
LOANFF	1.21e-06
LOANSUPP	2.01e-06
Constant	0.115**
Observations	2371
R-squared	0.077

Conclusion

✓An access to credit helps households in recovering natural disaster losses of households through reducing their liquidity constraint.

✓There is a non-linearity in the relationship between the amount of credit and the extent of disaster loss recovery of households.

✓The extent of disaster loss recovery goes up to a certain amount of credit and it starts declining after that amount of credit.

✓Informal financial sources contribute more to the recovery of household disaster loss compared to formal financial sources.

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Thanks