Whether Credit Kuznets Curve Exists in Rural India?: A panel household data analysis from 2001 to 2012

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"If I owe you a pound, I have a problem; but if I owe you a million, the problem is yours." - John Maynard Keynes

Introduction

- Improving access of low-cost credit to farmers is an important public policy for increasing agricultural production in developing countries. It improves liquidity in rural areas and also supports for expansion of non-farm sector activities in the economy. However, the relationship between access to credit and households' income and asset has not yet been properly understood in the literature.
- Therefore, using 500 panel form of rural household data in India from 2001 to 2011, we have analyzed relationship between credit and household income using kuznets curve framework. We test a hypothesis that "household credit behaves like a Kuznets curve." The study finding has huge policy implications on designing credit policy and in understanding permanent income and consumption of rural households in developing world, with widespread credit rationing.

Objectives

- To analyze debt structure of rural households in India
- To test whether kuznets curve type of relationship exists for rural credit.
- To evaluate marginal impact of selected factors on level of credit of rural households in India.

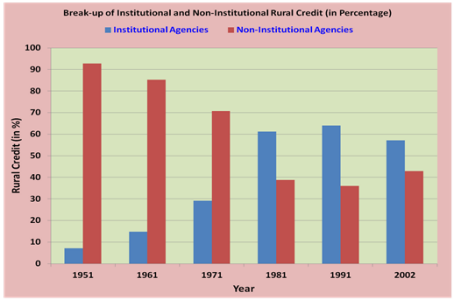

Fig. 1. Dynamics of Changing Structure of Credit in Rural India.

Fig. 2. Study sites in India

Methodology and Data

- Using Tobit form of non-linear regression model (eq. 1), we have analyzed relationship between rural credit and household income of over 500 panel households across 6 villages of central India from 2001 to 2011. These data were obtained from ICRISAT village level studies (i.e., Village Dynamic Study in South Asia (VDSA) data base).

Dynamic panel household model

$Credit_{it} = f(Credit_{it-1}, X_{it})$ eq 1.

Where: i = 1, ...n (no of households); and t = year (2001 to 2011)

Dependent Variables: The level of debt of a household (in 2009-10 const. Rs.)

Independent Variables: The list of factor determinants (X_{it}) on level of credit of a household are given in table 1 , along with the regression results.

Results and Discussions

- Over 40% of the total annual credit demand of the sample households in 2011 was met by the informal sources of credit. Among them, 38% did not have any bank account until mid of 2012.
- Our results from regression analyses (Table 1) suggest that level of debt of a household in any year is also dependent upon its debt in the previous year, suggesting for a persistent nature of debt in rural India.

Table 1. Determinants of Total Amount Borrowed per household

S N	Factors\Variables	Model 1 (dy/dx)	Z Values	Elasticity at sample mean
1	Amount borrowed (1 year lag)	.61	26.37 [a]	0.67
2	Age (Yrs)	875.76	1.31 [ns]	0.99
3	Age_Square	-10.63	-1.67 [c]	-0.63
4	Education	759.46	2.34 [b]	0.07
5	Family Size	179.37	0.25 [ns]	0.02
6	Total Operated Area (Acres)	2103.37	3.73 [a]	0.23
7	Operated Area Square	-49.79	-2.97[a]	-0.07
8	Percentage of leased in area	-72.35	-2.53 [b]	-0.02
9	Percentage of irrigated area	50.65	1.56[d]	0.04
10	Percentage of non-cereal area	101.14	2.96 [a]	0.10
11	No of children below 20 years	-1564.87	-1.36 [ns]	-0.06
12	Total Income Real	.185	10.08 [a]	0.50
13	Total Income Square	-0.00	-5.02 [a]	-0.06

Fig. 3 Micro finance office in a village in rural India

Figure 4. Growing crisis of drinking water in rural India demands more private investment.

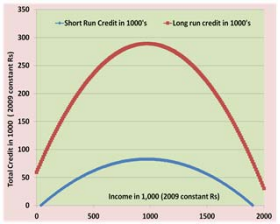

Fig. 5 Credit Kuznets Curve out of the parameters reported in Table 1.

- Our empirical results clearly suggest that debt of a rural household exhibits an inverted U-shaped relationship with income of a household. That is, income elasticity of debt is not constant across the household but it varies with the income level of household, resulting in a non-linear relationship.
- The household income also determines consumption. If access to credit (level of credit) of a household is also determined by income of the household, then it raises a serious doubt on validity of consumption smoothening hypothesis in developing countries where credit rationing is widespread. The credit has important role in smoothening level of consumptions of a household even though household income fluctuates year to year.

Conclusions and Implications

- Huge difference exist between a short-run and long-run equilibrium level of credit of farm household across the sites.
- The results here suggest that a complex non-linear relation exists between credit and income of a rural household. The results also provide a strong evidence on existence of a Credit Kuznets Curve in rural India.

Reference

Binswanger H and Sillers D A, 1984. Risk Aversion and Credit Constraints in farmers' Decision- Making: A Reinterpretation.

Data Source: ICRISAT- VDSA data source (www.vdsa.org)

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