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

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Selected Poster prepared for presentation at the 2016 Agricultural & Applied Economics Association Annual Meeting, Boston, MA, July 31- Aug. 2

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Whether Credit Kuznets Curve Exists in Rural India?: A panel household data analysis from 2001 to 2011

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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 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).
- 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.

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).
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Dynamic panel household model

\[
\text{Credit}_i = f(\text{Credit}_{i-1}, \text{X}_i) \quad \text{eq 1.}
\]

Where: \( i = 1, \ldots, n \) (no of households); and \( t = \text{year (2001 to 2011)} \)

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

Independent Variables: The list of factor determinants (\( X_i \)) 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.

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.

Table 1. Determinants of Total Amount Borrowed per household

<table>
<thead>
<tr>
<th>S No</th>
<th>Factors/Variables</th>
<th>Model 1 ( \frac{dy}{dx} )</th>
<th>( Z ) Values</th>
<th>Elasticity at sample mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Amount borrowed (1 year lag)</td>
<td>.41</td>
<td>26.37*</td>
<td>0.67</td>
</tr>
<tr>
<td>2</td>
<td>Age (Yrs)</td>
<td>8.7956</td>
<td>1.31</td>
<td>0.09</td>
</tr>
<tr>
<td>3</td>
<td>Age (Yrs)</td>
<td>-0.83</td>
<td>-1.67*</td>
<td>0.03</td>
</tr>
<tr>
<td>4</td>
<td>Education</td>
<td>789.46</td>
<td>21.24*</td>
<td>0.07</td>
</tr>
<tr>
<td>5</td>
<td>Family Size</td>
<td>179.37</td>
<td>0.25</td>
<td>0.02</td>
</tr>
<tr>
<td>6</td>
<td>Total Operated Area (Acres)</td>
<td>210.37</td>
<td>0.75*</td>
<td>0.23</td>
</tr>
<tr>
<td>7</td>
<td>Operated Area Square</td>
<td>-45.76</td>
<td>-2.95*</td>
<td>0.07</td>
</tr>
<tr>
<td>8</td>
<td>Percentage of leased in area</td>
<td>-2.15</td>
<td>-2.55*</td>
<td>0.02</td>
</tr>
<tr>
<td>9</td>
<td>Percentage of irrigated area</td>
<td>0.05</td>
<td>1.96*</td>
<td>0.04</td>
</tr>
<tr>
<td>10</td>
<td>Percentage of non-cereal area</td>
<td>101.16</td>
<td>3.06*</td>
<td>0.10</td>
</tr>
<tr>
<td>11</td>
<td>No. of children below 20 years</td>
<td>-159.47</td>
<td>-2.56*</td>
<td>0.08</td>
</tr>
<tr>
<td>12</td>
<td>Total Income Real</td>
<td>230</td>
<td>10.8*</td>
<td>0.05</td>
</tr>
<tr>
<td>13</td>
<td>Total Income Square</td>
<td>-4.00</td>
<td>-9.02*</td>
<td>0.08</td>
</tr>
</tbody>
</table>

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


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