The impact of idiosyncratic and covariate shocks on changes in risk preferences between the lean and harvest seasons for smallholder farmers in Vietnam

Thea Nielsen  
University of Hohenheim  
Institute of Agricultural Economics and Social Sciences in the Tropics and Subtropics  
Chair of Rural Development Theory and Policy  
E-Mail: thea.nielsen@uni-hohenheim.de  
Phone: (+49) 711-459-23771  
Postal address: Wollgrasweg 43, 70593 Stuttgart, Germany

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Thea Nielsen, University of Hohenheim, Chair of Rural Development Theory and Policy (490a)

Introduction
- Shocks can cause households to fall into and remain in poverty traps because of a low asset base and high risk aversion.*
- Despite this well-known connection between poverty traps with shocks and risk aversion, no study has examined if shocks cause risk preferences to change over time in a developing country:
  - If shocks increase risk aversion, this could increase the likelihood that people remain mired in poverty from pursuing more extreme low-risk, low-return strategies.
  - If specific shocks increase risk aversion more over time, policy can be tailored to address these shocks.

*e.g., Dercon, 1996; Lybbert and McPeak, 2012; Morduch, 1994; Rosenzweig and Binswanger, 1993.

Objectives
- To examine risk preference changes from the lean season to the harvest season in 2011.
- To determine whether shocks increase risk aversion over time.
- To analyze whether the above vary by elicitation technique.

Study area
- Northwestern Vietnam in a marginal upland area
- Rice: main food crop and grown in paddy fields
- Maize: main cash crop grown on degraded upland fields
- Cluster sampling procedure representative of district:
  - 20 villages randomly selected in district via proportionate-to-size
  - 15 households randomly selected within each village
  - 538 household heads and spouses (if applicable) interviewed in the lean season (April/May) and harvest season (Nov./Dec.)

Seven methods to elicit risk preferences
- Lottery game using the multiple price list technique with payouts (Holt & Laury, 2002): respondents make 10 choices between 2 options
  - Ex. of the first choice:
    - Fully willing to take risks.
    - Fully prepared to take risks.
- U.S. Federal Reserve Board’s financial risk tolerance question
- Self-assessment scale:
- Yield and price gambles of maize and rice, adapted from Hill (2009): respondents make 1 choice between 4 options
- Ex. of the rice yield gamble:

Methods to analyze shock impacts
- First-difference regression analyses:
  - Dependent variable = risk preference changes across seasons
  - Independent variables = first-difference of shock impacts (losses from shock ÷ annual per capita expenditures) and time-invariant factors (gender, education, social capital, etc.)
- Shocks are examined by type and characteristic:
  - Idiosyncratic vs. covariate
  - Drought, animal death, other covariate, other idiosyncratic

Results and discussion
- Risk preferences are not stable across seasons
- Risk preferences changes vary by the elicitation technique:
  - Animal deaths are not significant in any elicitation method
  - Drought is significant in one method only with a very small effect
  - Other covariate shocks have a significant and large impact
  - Idiosyncratic shocks have a significant impact but smaller impact
  - The influence of shocks impacts on changes in risk preferences to change over time in a developing country:

Conclusions
- We find that government support to households affected by widespread drought and buffalo deaths may have been effective in preventing further increases in risk aversion from these shocks, while other non-supported shocks increase risk aversion.
- Thus, mechanisms to help households cope with shocks that are not supported by the government should be explored.
- Future research on risk preference changes over time should rely on several elicitation techniques and examine shocks by type.

Notes: < 0 indicates a decrease in risk aversion, 0 = no change, > 0 increase in risk aversion over time.

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