

Shocks, Individual Risk Attitude, and Vulnerability to Poverty among Rural Households in Thailand and Vietnam[☆]

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Summary. — We examine whether the experience of shocks influences individual risk attitude. We measure the risk attitude of more than 4,000 households in Thailand and Vietnam via a simple survey item. The experience of adverse shocks, which is typical for poor and vulnerable households, is related to a higher degree of risk aversion, even when controlled for a large set of socio-demographic variables. Therefore, shocks perpetuate vulnerability to poverty via their effect on risk attitude. We extend this general finding to various categories of shocks and find differences between Thailand and Vietnam. This suggests that risk-coping strategies profit from case-specific design.
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Key words — risk attitude, shocks, vulnerability, risk perception, behavior toward risk, South East Asia

1. INTRODUCTION

Households who are vulnerable to poverty or are chronically poor are subject to vicious cycles, as has often been noted (e.g., [Dercon, 2009](#); [Lipton, 1968](#)). One of the factors keeping these cycles ongoing may be the relatively high risk aversion of poor households. High risk aversion can lead to economic behavior which generates relatively less income, thus increasing the probability of poverty. Under vulnerable living conditions, however, people can hardly afford to accept higher risks since adverse outcomes would endanger their very survival (see [Mosley & Verschoor, 2005](#)). This is the case in emerging market economies, such as Thailand and Vietnam, where chronic poverty has declined but transient poverty remains high especially for the rural population. So what gives rise to and sustains such vicious cycles?

We examine the possible impact that shocks may have on these cycles via changing risk attitude. The hypothesis is that shocks, which we define here as unfavorable shocks, tend to increase risk aversion. We have three motivations to examine this relation: first, shocks occur frequently in rural areas and are a major source of vulnerability to poverty (e.g., [Hulme & Shepherd, 2003](#)). Second, shocks and risk can have long-lasting negative effects on development ([Dercon, 2004](#); [Elbers, Gunning, & Kinsey, 2007](#)). Third, living with shocks may be regarded as making decisions with “background risk” which is known to increase risk aversion ([Eckhoudt, Gollier, & Schlesinger, 1996](#); [Harrison, List, & Towe, 2007](#); [Herberich & List, 2012](#)). Thus, shocks do not just have negative direct effects but possibly also indirect amplifying effects via changing risk attitude. This amplifier contributes to the persistence of vulnerability to poverty and missed opportunities.

Risk attitudes are crucial in understanding economic behavior. Accordingly, risk attitudes have been investigated in some detail, typically as an invariant personal characteristic. However, this invariance is not fully true as has been noted, for example, in studies on vicious cycles. Even though the individual risk attitude has a clear person-specific root, it is also time-varying due to (changing) socio-demographic circumstances ([Guiso & Paiella, 2008](#)). Such living conditions are particularly volatile in developing countries and thus deserve careful attention. Several studies consider such conditions and their influence on risk attitude (e.g., [Tanaka, Camerer, & Nguyen, 2010](#)), but it seems fair to say that empirical coverage of possible important determinants could be more complete. Accordingly, our research contributes to filling this gap by examining the influence of a wide range of shocks on risk attitude among a relatively poor rural population. To the best of our knowledge, this analysis is missing so far.

[☆] The views expressed in this paper are those of the authors and do not necessarily represent those of the European Central Bank.

^{*} For their helpful comments, we thank the participants of the International Conference of the Economic Science Association (ESA), the Annual Conference of the German Economic Association (VfS), the Annual Conference of the Royal Economic Society (RES), the Annual International Conference of the Research Committee on Development Economics of the German Economic Association, and participants of several research seminars, in particular Bernd Hardeweg, Olaf Hübler, Peter Moffatt, Holger Strulik, Andreas Wagener and three anonymous referees. We gratefully acknowledge the financial support of the German Research Foundation (DFG FOR 756).

As the basis of our investigation we rely on a standard household survey conducted in rural provinces of North East Thailand and Vietnam in 2010. This survey covers more than 2,000 households in each country and is representative of the rural population in these areas. The survey contains a standard item revealing the risk attitude of respondents, which has been used in many studies before (see Dohmen, Falk, Huffman, Sunde, Schupp, & Wagner, 2011; Hardeeweg, Menkhoff, & Waibel, 2013; Jaeger *et al.*, 2010, and references therein).¹ Owing to the survey method, the response on this item can be easily related to other characteristics of participating individuals. We find the expected relationships between risk attitude and a few standard determinants, such that older people respond in a more risk averse way. Interestingly, this observation also holds for lower income respondents, supporting the notion of vicious cycles (see Mosley & Verschoor, 2005) but providing evidence different from Binswanger (1980). The relationships are similar in both Thailand and Vietnam. Although this indicates that household conditions (e.g., income) have a direct influence on risk attitude, our main focus is on the living circumstances of vulnerable households, which we capture by examining the role of shocks on risk attitude.

The underlying data set is rich in its coverage of shocks because it is designed to analyze the vulnerability of relatively poor rural households in North East Thailand and Vietnam. We rely on detailed information which households give about shocks experienced by them over the 2 years preceding the survey. Owing to the detailed reporting of shocks, we can categorize shocks according to dimension in order to examine which may be more relevant. In addition to considering the number of shocks that a household was exposed to, we categorize shocks in four dimensions: (i) kind, e.g., whether the shock is demographic or agricultural, (ii) impact, i.e., whether it has a high, medium, or low impact on the household affected (based on household's classification), (iii) dispersion, i.e., whether it is idiosyncratic or covariate, and (iv) surprise, i.e., the degree of expected *versus* unexpected shocks.

Our main finding is a robust relationship between adverse shocks and higher risk aversion. This mechanism contributes to the persistence of vulnerability. The relationship is maintained with or without control variables and holds for both countries. For detailed shock dimensions four findings emerge: first, shocks of all kinds occur, but some kinds have a larger impact and this may differ between countries. Second, it is not just the number of shocks that matters but the number of those with a high impact. Third, with respect to idiosyncratic *versus* covariate shocks, both types of shocks may be important, the former more in Vietnam, the latter more in Thailand. Fourth, and in line with theoretical reasoning, those shocks which are more unexpected matter more.

In order to demonstrate the relevance of these determinants of risk attitude we show that our measure of risk attitude is meaningful in the sense that it can predict risk-related behavior to some degree. This relationship provides the link between shocks and the often mentioned vicious cycles in development, because adverse shocks reduce risk-taking which in turn reduces expected outcomes, etc. (e.g., Dercon, 2008; Lipton, 1968; Yesuf & Bluffstone, 2009). Moreover, the measures of risk attitude and shocks seem quite reliable: the survey measure of individual risk attitude is validated by an experiment revealing risk aversion. The shocks can be substituted to some degree by subjectively perceived household income volatility. This measure should be, and is indeed, highly correlated with the occurrence of shocks. Eventually it is noteworthy, that this study is restricted to a cross-sectional analysis because the

expectation of shocks and the risk experiment for Vietnam are only available for the wave conducted in 2010.

Our study fits into a line of studies examining risk attitudes in developing countries. Starting with the pioneering experimental work of Binswanger (1980, 1981), several authors have reproduced and extended the elicitation of risk aversion (e.g., Cardenas & Carpenter, 2008; Harrison, Humphrey, & Verschoor, 2010; Humphrey & Verschoor, 2004). Our approach differs from most other studies, particularly from anonymous experiments, because it considers a large set of socio-demographic control variables, such as age, gender, education etc. (e.g., Tanaka *et al.*, 2010). There are a few studies where the relationship between changing circumstances and risk attitude is analyzed, e.g., Yesuf and Bluffstone (2009), who find that reduced wealth is related to more risk aversion. This is in line with evidence from advanced economies such as in Guiso and Paiella (2008), who find a role for declining wealth and uninsurable risk in generating higher risk aversion, or Malmendier and Nagel (2011), who find that exposure to macro-economic risk leads to less financial risk-taking. Although these related studies clearly motivate our research, we are not aware of any study (in developing countries) where a broad set of shocks has been examined comprehensively with regard to individual risk attitude.

The paper is set out as follows: Section 2 introduces the data and describes risk attitudes. Section 3 informs about households' perspectives on shocks and provides several measures of shock classification. Determinants of risk attitudes and, in particular, the role of shocks in explaining risk attitudes are the focus of Section 4. Section 5 indicates the usefulness of risk attitude in predicting household decision-making and provides some robustness tests, including an experimental validation of the survey item. Section 6 concludes.

2. DATA COLLECTION AND DESCRIPTIVE STATISTICS

This section summarizes the data collection process (Section 2(a)), describes typical characteristics of rural households in Thailand and Vietnam (Section 2(b)) and subsequently describes the response to our survey item measure of risk attitude in both countries (Section 2(c)).

(a) Data collection

The data set originates from the project "Impact of shocks on vulnerability to poverty: Consequences for the development of emerging South East Asian economies," funded by the German Research Foundation (FOR 756). Primary data were collected during a survey which was carried out in three provinces in the North East region of Thailand and three provinces across Vietnam between April and June 2010. The countries were deliberately chosen: they are similar in size and development level, particularly considering rural areas (whereas the central region of Thailand stands out due to high income per capita). By contrast, the two countries have different cultural and institutional backgrounds. Thailand is a Buddhist country (more than 90% of the population) following largely traditional open-market policies with limited state interference. Vietnam, however, is characterized by the absence of important religious groups (about 80% of the population is made up of atheists) and by several decades of a conventional socialist planning economy. Although the economy has been liberalized somewhat during the last 20 years, state enterprises and state interference still play a much more

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