

Experimentally-validated survey evidence on individual risk attitudes in rural Thailand

1. Background

- ⇒ Many experimental studies of individual risk attitudes in developing countries reported in the literature.
- ⇒ Sample sizes are usually small, lacking variation and scope in socio-economic variables, however.
- ⇒ Micro-econometric analysis of the behaviour of rural-based individuals in emerging market economies requires reliable and sufficiently broad

2. Objectives

- Incorporation of a simple self-assessment of individual risk attitude in a larger panel survey
- Assessment of the reliability of a survey-based measure by experimental evidence

3. Survey data

- Panel survey among 2,200 rural households in three peripheral provinces of Thailand and Vietnam each using a 3-stage cluster sample representative of the rural population
- Comprehensive questionnaire on household demographics, income and consumption expenditures, wealth, details of farm- and non-farm self-employment, off-farm employment, shock experience and risk perception
- 2 survey waves conducted in April-June 2007 and 2008
- Self-assessment of risk attitude on an 11-point Likert scale: "Are you generally a person who is fully prepared to take risks (0) or do you try to avoid taking risks (10)"

4. Experiment

- Respondents of the 2nd survey wave in Ubon Ratchathani province participated in a risk experiment designed as in Dohmen et al. (2009)
- At each row of Table 1 the participant was asked in ascending order of the rows whether she would prefer to receive the sure payoff or to play a game in which depending on the result of flipping a coin the payoff could be zero or 300 Thai Baht (\$17.46 PPP).
- She was also informed that after the choices had been noted, a random number between 1 and 20 would determine which game was to be played with real payoffs.
- In case the number drawn was below the respondent's switch point, the lottery would be played by tossing a coin. 300 THB would be paid upon "King" and 0 otherwise. If the random number was higher than the switch point, the respondent received the safe amount. By this procedure, the incentive to reveal actual preferences was ensured.

Table 1: Risk experiment payoffs and results

Row	Safe amount	Lottery payoffs $p_0=0.5$ $p_1=0.5$	Frequency	Cumulative relative frequency	Interval for the coefficient of relative risk aversion r
1	0	0 300	40	0.042	0.796 to infinity
2	10	0 300	240	0.297	0.744 to 0.796
3	20	0 300	99	0.402	0.699 to 0.744
4	30	0 300	69	0.475	0.656 to 0.699
5	40	0 300	65	0.544	0.613 to 0.656
6	50	0 300	65	0.613	0.569 to 0.613
7	60	0 300	40	0.655	0.524 to 0.569
8	70	0 300	35	0.693	0.476 to 0.524
9	80	0 300	36	0.731	0.424 to 0.476
10	90	0 300	34	0.767	0.369 to 0.424
11	100	0 300	73	0.844	0.309 to 0.369
12	110	0 300	10	0.855	0.244 to 0.309
13	120	0 300	21	0.877	0.171 to 0.244
14	130	0 300	5	0.882	0.091 to 0.171
15	140	0 300	7	0.890	0 to 0.091
16	150	0 300	17	0.908	-0.103 to 0
17	160	0 300	4	0.912	-0.220 to -0.103
18	170	0 300	4	0.916	-0.357 to -0.220
19	180	0 300	3	0.919	-0.518 to -0.357
20	190	0 300	76	1.000	-infinity to -0.518

5. Results

- **Self-assessment** exhibits strong central tendency (Figure 1)
- Pronounced clusters at the extremes, mean of 4.56
- Determinants (Table 2) are generally of expected signs
- However, some (insignificant) estimates show a different sign than found in earlier studies.

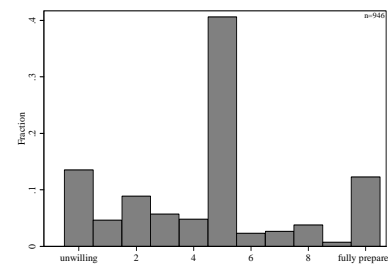


Figure 1: Self-assessment of general risk attitude

Table 2: Determinants of the self-assessment of general risk attitude

	(1)	(2)	(3)
Female	-0.023	-0.047	0.054
Age (years)	-0.050***	-0.049***	-0.032***
Height	0.027	0.024	0.022
Log. consumption (\$PPP/AE)		0.514**	0.240
Education (years)			0.034
Married			0.142
Dependency ratio			-0.264
Household size			0.042
Self-employed			1.390***
Unemployed			-0.711
Civil servant			0.176
Subjective health impairment			-0.086
Optimism			0.329**
Constant	2.827	2.425	1.729
Log. sigma	1.332***	1.329***	1.316***
Log pseudo-likelihood	-2184.27	-2178.86	-2160.80
Observations	932	931	928

Notes: Results of interval regressions. * p<0.1, ** p<0.05, *** p<0.01

- The **Risk experiment** finds most individuals are risk averse (Table 1)
- Fewer risk-neutral and risk-loving respondents than in developed countries (Dohmen et al., 2009; Holt and Laury 2002).
- Among the determinants of the experimental results shown in Table 3, the self-assessment of general willingness to take risk is the single most important predictor in various model specifications.
- The relationship between self-assessment and experiment is closer for better educated segments of the population (col. 4 in Table 3).

Table 3: Determinants of the experiment (interval regression estimates)

	(1)	(2)	(3)	(4) ¹
General willingness to take risk	0.266***	0.280***	0.261***	0.376**
Female		0.294	0.134	-0.436
Age (years)		0.021	0.026	0.001
Height		0.005	-0.002	-0.054
Other controls		no	yes	no
Constant	5.760***	3.726	4.004	14.122
Log. sigma	1.780***	1.779***	1.772***	1.745***
Log pseudo-likelihood	-2840.37	-2836.54	-2819.71	-500.02
Observations	929	928	924	164

Notes: ¹ Only respondents with secondary education (> 6 years of schooling). ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively. Other controls include: education (years of schooling), dependency ratio, household size, optimism and dummies for being married, self-employed, unemployed and employed as a civil servant and subjective health impairment.

5. Summary and conclusions

- Our findings are generally in line with results from other studies in developed and developing countries.
- Some differences are an insignificant gender effect and a higher willingness to take risk associated with being a civil servant and married.
- The consistency of survey-based and experimental measures is less tight than in a developed country context, but increases with education level.
- It is therefore expected that an adjustment of the experimental and survey tools to the specific cultural and educational background of respondents can improve the fit of both measurement tools..