

Risk Aversion and Religion

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Outline

How are risk aversion and religion correlated?

- 1 Religion and economic outcomes in the literature
- 2 Data and experimental procedure
- 3 Risk aversion and church membership
- 4 Protestants versus Catholics
- 5 Believing versus belonging
- 6 Conclusions

Religion and Economic Behavior

- Weber (1905) postulated an association between Protestantism and economic development in the West.
- Empirical work suggests a relationship between religion and economic performance (Barro and McCleary, 2003, 2006; Guiso et al., 2003, 2006).
- Barro and McCleary find that growth is positively associated with religious beliefs but negatively associated with church attendance.
- Guiso et al., find that religious beliefs are associated with attitudes conducive to economic growth (cooperation, thriftiness, value of work, etc . . .)
- One mechanism whereby the effect of religion on the economy could operate is via a correlation with risk attitudes.

Risk Aversion and Religion in the Previous Literature

- A number of studies have found a positive correlation between religiosity and risk aversion (Miller and Hoffmann, 1995; Liu, 2010; Dohmen et al., 2011, Hillary and Hui, 2009).
- There is a negative correlation between religiosity and gambling (Hoffmann, 2000; Diaz, 2000; Ellison and McFarland, 2011).
- The evidence on Catholic and Protestant differences is mixed:
- Kumar et al. (2011), Barsky et al. (1997) and Benjamin et al. (2010) find that Protestants are more risk averse or make safer financial investments than Catholics.
- Renneboog and Spaenjers, (2011) and Dohmen et al. (2011) observe the opposite.

Our Contribution

- We use microdata of individuals from the LISS panel (as opposed to country/regional variation)
- We use an incentivized measure of risk aversion
- We have detailed questionnaire data on religiosity and beliefs



Data on Religiosity and Risk Aversion

- LISS panel is a representative panel for the Dutch population, around 9,000 individuals.
- Panel members fill in questionnaires every month.
- We use detailed religiosity data of one of the questionnaires.
- We combine this with a separate study on risk aversion.
- Matched data on risk preferences and religiosity questionnaire for 2,304 individuals.



Risk-Aversion Measure

- Experimental study with LISS panel about higher-order risk attitudes (Noussair, Trautman and Van de Kuilen, 2011)
- Consider a lottery L which yields 65 with probability 0.5 or 5 with probability 0.5.
- Subjects make pairwise choice between lottery L and a sure pay-off of (20, 25, 30, 35, 40).
- Presentation was counterbalanced with respect to order and position on the screen.
- 2,304 subjects in total, of which 1,047 had real payments, the other hypothetical payments.
- Measure of risk-aversion is number of safe choices (1 – 5). More than 2 safe choices indicates risk-aversion.

Display That the Subjects Saw

CentER  data 

Deel 1, vraag 1 van 5


Optie L	Optie R
 $\begin{matrix} 1,2,3 \\ \swarrow \\ \text{€ } 65 \\ \searrow \\ 4,5,6 \\ \text{€ } 5 \end{matrix}$	 $\begin{matrix} 1,2,3 \\ \swarrow \\ \text{€ } 20 \\ \searrow \\ 4,5,6 \\ \text{€ } 20 \end{matrix}$

[Bekijk de instructie](#)

Kiest u "Optie L" of "Optie R"?

Ik kies Optie L

Ik kies Optie R

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Summary Statistics

Variable	mean	obs.	Cath.	Prot.	Δ
Church member	42.4	2304			
Parents member	66.3	2304	94.6	94.1	
Roman Catholic	22.3	2304			
Protestant	16.1	2304			
Other faiths	4.0	2304			
<i>Attendance</i>					
> 1 per week	3.7	2297	1.2	14.2	$p < 0.1$
\approx 1 per week	6.9	2297	6.5	27.4	$p < 0.1$
\approx 1 per month	7.0	2297	14.5	16.9	
at age 15 > 1 per week	10.8	2297	13.5	23.7	$p < 0.1$
at age 15 \approx 1 per week	32.4	2297	56.6	46.6	$p < 0.1$
at age 15 \approx 1 per month	6.9	2297	7.1	8.1	
Belief (min 0, max 7)	2.47	757	3.12	5.79	$p < 0.1$

Summary Statistics

	Variable	mean	Cath.	Prot.	Δ
A	Female	51.9	53.9	56.2	
	Age	49.6	54.2	54.3	
B	Married	63.3	71.4	76.3	
	Divorced	8.2	7.6	4.3	$p < 0.1$
	Number of children	0.83	0.73	0.77	
	Gross monthly income	2211	2377	1903	
	Home owner	75.0	79.6	78.2	
	Health status very good	19.9	19.5	22.6	
	college or more	30.8	27.4	29.0	
	Civil Servant	10.1	10.3	11.0	
	Self-employed	4.3	3.5	3.8	
	Dutch Passport	98.1	97.5	100	$p < 0.1$
	Foreign Passport	2.7	3.1	0.3	$p < 0.1$

Parents Member of Church and Own Membership

Parents in church	Self in church	obs.	Risk aversion
Yes	Yes	917	3.54
Yes	No	611	3.36
No	Yes	61	3.56
No	No	715	3.35

Tobit Analysis of Church Membership on Risk Aversion

- Own church membership is associated with higher risk aversion.
- But parents' membership is not correlated with own risk aversion

Risk aversion	All	All	Real	Real
Controls A	Yes	Yes	Yes	Yes
Controls B	No	Yes	No	Yes
Self member	.275 (1.78)*	.221 (1.41)	.641 (2.86)***	.509 (2.23)**
Parents member	.132 (.80)	.127 (.77)	-.108 (-0.44)	-.067 (-0.27)
N	2304	2304	906	906

Tobit Analysis of Church Attendance on Risk Aversion

The same pattern is true for church attendance:

- own current church attendance is positively correlated with own risk aversion.
- whether one's parents attended church services is not or negatively correlated with own current risk aversion.

Risk aversion	All	All	Real	Real
Controls A	Yes	Yes	Yes	Yes
Controls B	No	Yes	No	Yes
<i>Attendance now</i>				
> 1 per week	.839 (2.29)**	.612 (1.72)*	1.097 (1.99)**	.919 (1.63)
≈ 1 per week	.575 (2.00)**	.460 (1.63)	.981 (2.29)**	.670 (1.53)
≈ 1 per month	.020 (.07)	.033 (.13)	.643 (1.77)*	.556 (1.52)
<i>Attendance age 15</i>				
> 1 per week	-.287 (-1.15)	-.106 (-.42)	-.487 (-1.30)	-.420 (-1.09)
≈ 1 per week	-.035 (-.22)	.088 (.54)	-.492 (2.13)**	-.359 (-1.46)
≈ 1 per month	.041 (.15)	.041 (.15)	-.253 (-.57)	-.208 (-.48)
N	2290	2290	897	897

Catholics versus Protestants

- Is there a difference in risk attitude between Catholics and Protestants?
- Kumar et al (2011) find that Protestants are more risk-averse than Catholics
- Renneboog and Spaenjers (2011) find that Catholics are more risk-averse (data from CentERpanel with a hypothetical risk question).

Church	obs.	Risk aversion
Roman Catholic	514	3.51
Protestant	372	3.56
Other faiths	92	3.55

Tobit Analysis of Church Type and Risk Aversion

- Protestants are more risk-averse than non-religious and Catholics.

Risk aversion	All	All	Real	Real
Controls A	Yes	Yes	Yes	Yes
Controls B	No	Yes	No	Yes
<i>All subjects</i>				
Roman Catholic	.288 (1.76)*	.245 (1.49)	.392 (1.66)*	.286 (1.20)
Protestant	.404 (2.12)**	.324 (1.70)*	.951 (3.33)***	.813 (2.81)***
Other faiths	.321 (0.99)	.278 (0.84)	.453 (0.95)	.391 (0.75)
N	2304	2304	906	906
$\beta(\text{Catholic})=\beta(\text{Protestant})$	F=0.30	F=.14	F=3.24*	F=2.87*
<i>Catholic and Protestant</i>				
Catholic	-.138 (0.67)	-.118 (1.91)*	-.607 (2.04)**	-.537 (6.27)***
N	886	886	354	354

Believing versus Belonging

Is the positive correlation between risk-aversion and religion driven by religious beliefs, or by social effects of religious participation?

We have two indicators for beliefs:

1. Religious belief indicator (1 – 7) sum of subindicators:

- life after death
- existence of heaven
- Bible as the word of God
- Hell
- Devil
- existence of Adam and Eve
- whether it makes sense to pray

2. Degree of belief in God (1 – 6)

Tobit Analysis Believing versus Belonging

- Strength of religious beliefs has no significant relation with risk aversion
- We have seen earlier that church attendance predicts risk aversion
- This suggests that it is the social aspect of church membership that is related to risk aversion

Risk aversion	All	All	Real	Real
Controls A	Yes	Yes	Yes	Yes
Controls B	No	Yes	No	Yes
Stronger belief (6 – 7)	.070 (1.62)	.042 (0.95)	.098 (1.45)	.064 (0.92)
N	757	757	285	285
<i>Degree of belief in God</i>				
2 Does not know if God exists	.073 (0.33)	.041 (0.18)	.092 (0.26)	.038 (0.11)
3 Does belief in a higher power, but not God	.013 (0.06)	-.009 (0.04)	-.124 (0.39)	-.220 (0.69)
4 Does some moments belief in God	.020 (0.08)	-.045 (0.17)	.140 (0.34)	.061 (0.15)
5 Does belief in God with doubts	.141 (0.60)	.079 (0.34)	.196 (0.55)	.042 (0.12)
6 Does belief in God without a doubt	.254 (1.23)	.198 (0.95)	.282 (0.90)	.150 (0.47)
N	2302	2302	905	905

Conclusions

- In our sample, risk aversion is positively associated with religiosity
- Given current religiosity, parents level in ones childhood has no effect.
- Protestants are more risk averse than Catholics
- The correlation appears to be related to the belonging rather than the believing aspects of religious practice.