

Vienna 2019 Abstract Submission

Title

Aged wines and risk preferences

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Conference Presentation

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Keywords

Wine and Economics, Risk attitude

Research Question

Is there a relationship between different types of risk attitudes (monetary or other types) and the willingness to pay for older wines?

Methods

Seven experimental sessions were organized with different audiences: wine students from the School of Wine & Spirits Business, management students and journalists.

Results

The main result show that monetary risk aversion is associated with a lower willingness to pay for risky wines.

Abstract

Aged wines and risk aversion

Agnoli Lara, Charters Steve, Georgantzis Nikolaos and Tisserand Jean-Christian

Abstract: In this paper, we conduct an experiment in order to explore how risk attitude in monetary decisions, and in wine consumption could be correlated. For this purpose, we used a sample of aged wines for which we asked the willingness to pay to 105 participants. The main result show that monetary risk aversion is associated with a lower willingness to pay for risky wines. This result sheds new light on consumers' behaviour, especially on aged wines that attract an increasing number of consumers in auctions.

Keywords Wines and Economics, Risk attitude

1. Introduction and experimental procedure

The experimental sessions took place at the School of Wine & Spirits Business in Dijon between September 2017 and December 2018. In total, seven experimental sessions were organized with different audiences: wine students from the School of Wine & Spirits Business, management students and journalists. The subjects received an invitation to the experiment by email. Each experimental session consisted of 20 subjects and lasted approximately one hour. All subjects received a cash payment at the end of the experiment and/or a bottle of wine based on the decisions made during the experiment.

The experience in which the subjects participate is divided into three distinct and independent stages. First, subjects are asked to make four consecutive monetary decisions by choosing one lottery from 10 lotteries, four times in a row through four separate tables presented in Figure 1. The objective of this first step is to measure the participants' monetary risk appetite in different situations, with varying amounts of money at stake.

Figure 1: Phase 1 risk aversion test

In the second stage, all players start with 18 euros. If the players do not spend their money, then the 18 euros are given to them in cash at the end of the experiment. In this step, we presented 20 bottles of aged wines to each participant and asked them to tell us the price they are willing to pay for each of these bottles between 0 and 18 euros. Subjects were informed that the wines had aged under uncontrolled conditions and could therefore have turned sour, or still be as good as they were. At the end of the stage, the experimenters drew lots for the price of the wine bottles (between 0 and 18 euros) and each of the 20 subjects was awarded one of the 20 bottles present in the room or not, depending on the willingness to pay that the subject had announced for the bottle assigned to him. If the willingness to pay announced by the subject is higher than the price of the bottle, then the bottle is sold to him for a price equal to his willingness to pay. In the face of this revealing mechanism, the best strategy for participants is simply to announce their true willingness to pay for each bottle of wine.

Finally, in a third step, we asked subjects to complete a questionnaire including personal questions such as age, sex, nationality, knowledge of wine (WSET level and 10 self-assessment questions), as well as a series of 40 general questions to estimate the subjects' risk aversion in everyday situations. An extract from the questionnaire is displayed in figure 2.

Figure 22: Stage 3 risk aversion questionnaire

2. Econometrics

In the end, these seven experimental sessions allowed us to collect a total of 140 separate observations including information about the subjects' risk aversion, their willingness to pay for bottles of older wines aged in sub-optimal conditions, their knowledge of wine matters, as well as personal information. Given the high number of censored observations ($WTP = 0$) and the sequential nature of the declaration of willingness to pay for each bottle, estimates are made with a tobit panel model. Results are shown in table 1.

Table 1: Estimates from the tobit panel model

The results we obtain highlight several interesting relationships. First, subjects report a significantly higher willingness to pay when their risk aversion is lower. This result is valid for monetary risk aversion, as well as for self-assessed risk aversion in the questionnaire of the third part of the experiment. This first result suggests that the perception of risk in wine consumption does not differ from the perception of risk in other dimensions. Second, the results show that risk return sensitivity is significantly and positively correlated with greater willingness to pay

for older wines of uncertain quality. While self-assessed wine knowledge is associated with a significant increase in willingness to pay, the WSET level is associated with a significant decrease in willingness to pay for older wines. Moreover, when a subject knows information about the bottle of wine presented to him, he is on average willing to pay 1.5 euros more for this bottle.

Our results show that risk aversion is associated with a lower willingness to pay for risky wines. This result sheds new light on consumers' behaviour, especially on aged wines that attract an increasing number of consumers in auctions. Very recently, we have conducted new sessions of this experiment in the form of auctions. For the time being, the number of observations available to us remains very limited. We hope to obtain new observations in the very near future to confirm the results we have obtained through this experiment.

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PANEL 1

Prob. of Winning	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Euros	1	1.12	1.27	1.47	1.73	2.10	2.65	3.56	5.40	10.90
I prefer										

PANEL 2

Prob. of Winning	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Euros	1	1.20	1.50	1.90	2.30	3	4	5.70	9	19
I prefer										

PANEL 3

Prob. of Winning	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Euros	1	1.66	2.50	3.57	5	7	10	15	25	55
I prefer										

PANEL 4

Prob. of Winning	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%
Euros	1	2.20	3.80	5.70	8.30	12	17.50	26.70	45	100
I prefer										

Figure 1: Phase 1 risk aversion test

In the second stage, all players start with 18 euros. If the players do not spend their money, then the 18 euros are given to them in cash at the end of the experiment. In this step, we presented 20 bottles of aged wines to each participant and asked them to tell us the price they are willing to pay for each of these bottles between 0 and 18 euros. Subjects were informed that the wines had aged under uncontrolled conditions and could therefore have turned sour, or still be as good as they were. At the end of the stage, the experimenters drew lots for the price of the wine bottles (between 0 and 18 euros) and each of the 20 subjects was awarded one of the 20 bottles present in the room or not, depending on the willingness to pay that the subject had announced for the bottle assigned to him. If the willingness to pay announced by the subject is higher than the price of the bottle, then the bottle is sold to him for a price equal to his willingness to pay. In the face of this revealing mechanism, the best strategy for participants is simply to announce their true willingness to pay for each bottle of wine.

Finally, in a third step, we asked subjects to complete a questionnaire including personal questions such as age, sex, nationality, knowledge of wine (WSET level and 10 self-assessment questions), as well as a series of 40 general questions to estimate the subjects' risk aversion in everyday situations. An extract from the questionnaire is displayed in figure 2.

11. For each of the following statements, please indicate the likelihood of engaging in each activity. Provide a rating from 1 to 7, when 1=extremely unlikely and 7=extremely likely

	1	2	3	4	5	6	7
Admitting that your tastes are different from those of your friends.							
Arguing with a friend who has a very different opinion on an issue.							
Asking your boss for a raise.							
Betting a day's income at the horse races.							
Buying an illegal drug for your own use.							
Chasing a tornado by car to take photos that you can sell to the press.							
Cheating a fair amount on your income tax.							
Cheating on an exam.							
Co-signing a new car loan for a friend.							
Dating someone that you are working with.							
Deciding to share an apartment with someone you don't know well.							
Disagreeing with your father on a major issue.							
Driving home after you had three drinks in the last two hours.							
Eating 'expired' food products that still 'look okay'.							
Exploring an unknown city or section of town.							
Forging somebody's signature.							

Figure 22: Stage 3 risk aversion questionnaire

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In the end, these seven experimental sessions allowed us to collect a total of 140 separate observations including information about the subjects' risk aversion, their willingness to pay for bottles of older wines aged in sub-optimal conditions, their knowledge of wine matters, as well as personal information. Given the high number of censored observations (WTP = 0) and the sequential nature of the declaration of willingness to pay for each bottle, estimates are made with a tobit panel model. Results are shown in table 1.

Bid	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Winestudent	.4877945	1.211967	0.40	0.687	-1.887616	2.863205
Riskestimation	1.584802	.3404685	4.65	0.000	.9174962	2.252108
Averagerisk	-.5900773	.3155709	-1.87	0.062	-1.208585	.0284302
Knowthiswine	2.259848	.4634105	4.88	0.000	1.35158	3.168116
Genre	.6268508	.7948695	0.79	0.430	-.9310648	2.184766
Age	.0683966	.2681937	0.26	0.799	-.4572535	.5940466
Knowledge	1.860347	.638744	2.91	0.004	.6084315	3.112262
WSET	-1.351035	.6420846	-2.10	0.035	-2.609498	-.092572
_cons	-4.891343	5.811535	-0.84	0.400	-16.28174	6.499056
/sigma_u	1.794532	.2911858	6.16	0.000	1.223818	2.365245
/sigma_e	4.17519	.1402559	29.77	0.000	3.900293	4.450086
rho	.1559296	.0437175			.0854219	.2568267

96 left-censored observations
500 uncensored observations
0 right-censored observations

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