

# Experimental economics

## Consumer risk perception of corked wines

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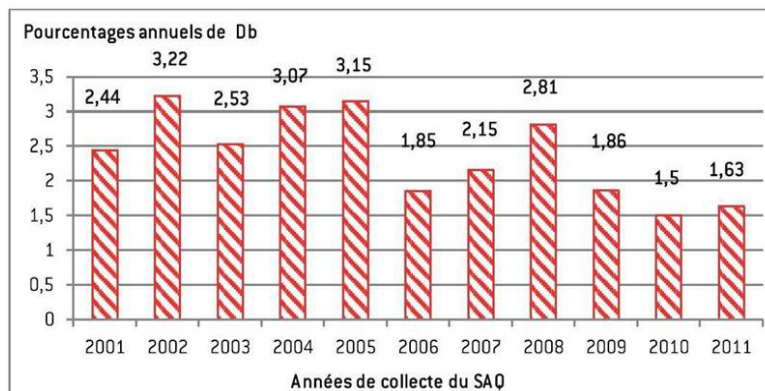
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# An experimental investigation

1. The problem to be investigated
2. Risk aversion when buying wine
3. The context of the experimental investigation
4. The preliminary results

## The Problem

- It is generally agreed that 3 to 5 percent of all bottles with natural corks show some degree of spoilage. This happens when the wine reacts with a substance called 2,4,6-Trichloroanisole; commonly known as TCA.
- CIVB statistics:



## Risk aversion when buying wine

- Buying a bottle of wine is often marked by expectations and uncertainty as to its quality.
- Consumers are confronted with an enormous amount of changing information on brands and vintages, which impacts on perceived risk (Speed, 1998).
- Desrochers and Outreville (2013) examine the decision to purchase a bottle of wine when information is provided on the risk of purchasing a corked bottle.
- Participants (students) were asked if they had prior experience with a corked bottle of wine
  - 39% of participants answered positively
  - The perceived probability of a bottle of wine to be corked was 6.1%.
  - In the study, the risk was assumed to be constant and not related to the price of the bottle.

## Objective of the paper

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1. Examine the purchase decision of people when faced with a perceived risk (a corked wine).
2. Estimate the perceived risk at the different levels of price.
3. Calculate the preference for a screw-cap at the different levels of price

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## An experimental investigation: the context

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- Subjects are required to indicate whether they accept to **buy L euros** a bottle of wine against the functional risk of buying a corked bottle and **losing L euros**  
The answer is a statement of preference for which there is no right or wrong answer *per se*.
- **6 questions** with wines valued from €5 to €80

## Example of questions

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- *Question:* you have the opportunity to buy a bottle at a price-level of **€xx** given that there is a risk that one of them is cork-taint.
- Do you buy this bottle at this price level?                      YES    NO
- Out of 100, how many of them, do you think, are cork-taint: \_\_\_/100
- Do you prefer that those bottles have a screw-cap?            YES    NO

## Additional questions (1)

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- Participants are asked if they have prior experience with a corked bottle of wine
- And asked to reveal their average perceived probability of a bottle of wine to be corked = EXPERIENCED RISK

This is to be compared with the

- Estimated risk at price €5 to €80 = ESTIMATED RISK AT PRICE

## Additional questions (2)

- Additional questions are used to determine subjects' risk attitudes:
- PRICE HABIT = How much do you pay for a bottle of wine?
- Participants were also asked to grade on a 5-point Likert scale how they perceived themselves compared to the group for three types of trait of character/personality:
  - 1) Are you a risk-seeking/risk-averse person?
  - 2) Are you careful with money/spending easily money?
  - 3) Are you an pessimist /optimist person?

## Sample (1)

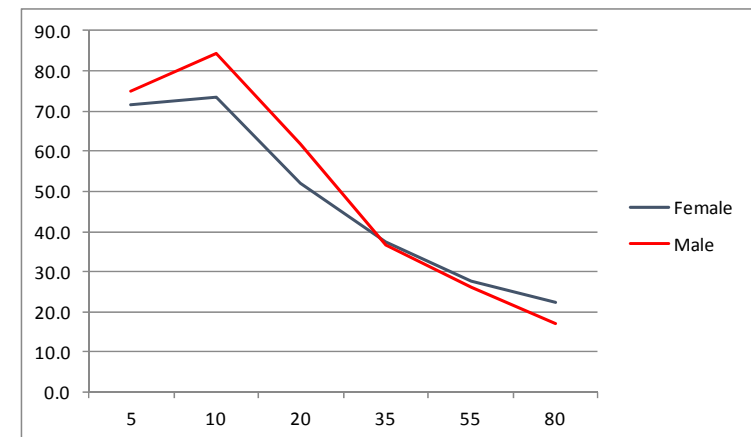
Experiments have been undertaken in the fall term of 2014 at INSEEC Bordeaux Business School

A replication of the experiment was undertaken with graduate students in wine marketing at ESC Dijon.

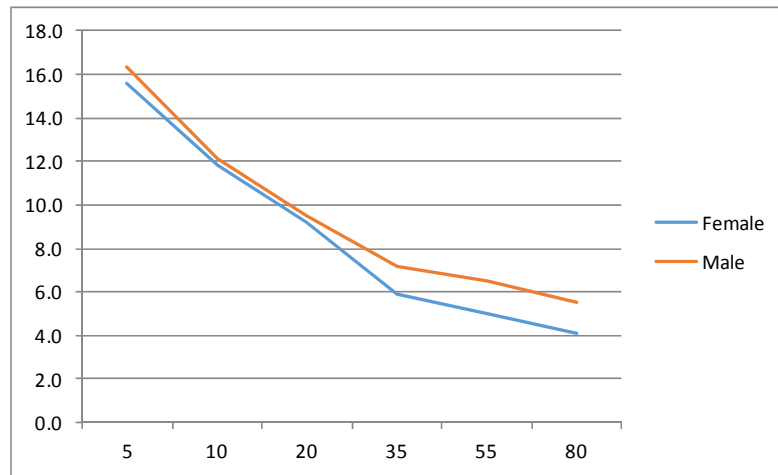
## Sample (2)

- The total number of participants in Bordeaux amounts to 261.
- 9.1% of the questionnaires were discarded for not respecting the monotonicity hypotheses.
- 23.2% of the respondents did not want to buy wine at all.
- The average age is 22.5 years old and 40% are men. The average price paid for a bottle when invited for a dinner at friends (**price habit**) is €9.8 and varies from €2 to €30.
- 79.4% of participants had prior experience with a corked bottle.
- The **perceived probability** of a bottle of wine was about 10%.
- About 78% of the respondents also indicated that the risk is higher for red wines than for white wines.

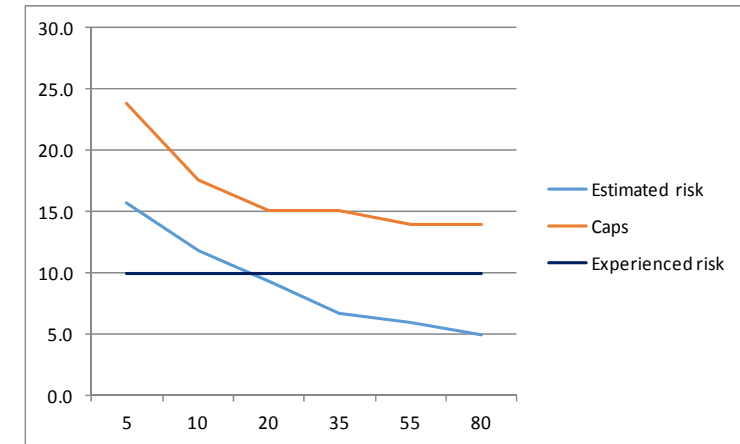
## Demand as a function of price



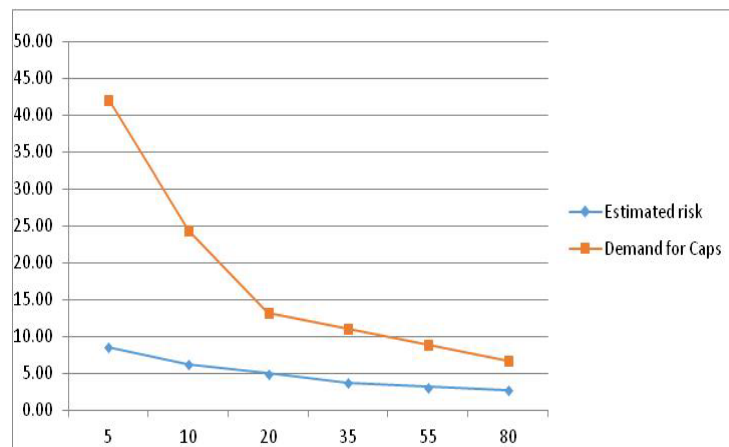
## The estimated risk at each price



## The demand for screw-caps?



## Replication in Dijon



## WTB a bottle of wine

Method: ML-Binary Logit			
Nb of observations: 237			
Convergence achieved after 4 iterations			
Variable	Coefficient	Std Error	Z-Statistic
C	0.088	0.833	0.106
PRICE HABIT	0.012	0.034	0.354
EXPERIENCED RISK	0.029	0.021	1.441 *
FEMALE	-0.132	0.327	-0.403
RISK SEEKING	0.383	0.157	2.442 ***
BIG SPENDER	-0.076	0.165	-0.463
PESSIMIST	-0.025	0.153	-0.164
R-squared	0.035		
S.E. of regression	0.418		

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, 10% levels.

## WTB a bottle of wine

Variable	Coefficient	Std Error	Z-Statistic
C	0.218	0.818	0.266
PRICE HABIT	0.018	0.034	0.541
ESTIMATION AT PRICE €20 - EXPERIENCED RISK	-0.041	0.022	-1.836 **
FEMALE	-0.188	0.329	-0.571
RISK SEEKING	0.383	0.158	2.423 ***
BIG SPENDER	-0.058	0.166	-0.349
PESSIMIST	-0.0004	0.153	-0.002
R-squared	0.039		
S.E. of regression	0.417		

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, 10% levels.

## WTP for a bottle of wine

Variable	Coefficient	Std Error	Z-Statistic
C	0.847	0.911	0.931
PRICE HABIT	0.158	0.038	4.131 ***
ESTIMATED RISK AT PRICE	-0.095	0.018	-5.087 ***
FEMALE	-0.499	0.339	-1.474 *
RISK SEEKING	0.122	0.171	0.717
BIG SPENDER	0.595	0.186	3.207 ***
PESSIMIST	0.04	0.167	0.241
S.E. of regression	1.503		

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, 10% levels.

## WTB bottles with screw-caps

Dependent Variable: CAPS  
 Method: ML - Binary Logit (Quadratic hill climbing)  
 Included observations: 237  
 Convergence achieved after 4 iterations

Variable	Coefficient	Std. Error	z-Statistic
C	-1.552260	0.582992	-2.662576
PRICEHABIT	0.052965	0.030266	1.750011
EXPERIENCEDRISK	0.027275	0.016126	1.691349
FEMALE	0.245911	0.324931	0.756810
BIGSPENDER	-0.225474	0.166712	-1.352472

## Conclusion

- The estimated risk by the participants negatively affects both the WTB and the WTP.
- Individual characteristics like the risk seeking behavior of participants have a significant impact. As expected, women are more risk averse than men and WTP is significantly lower.
- Demand for caps is higher for lower price wines and declines in parallel to the estimated risk that participants attribute at each level of price.
- This study on consumer risk perception confirms that screw-caps are associated with cheaper wines.

# Consumer risk perception

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**Thank you for your  
attention and  
comments**

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