

# POSTGRADUATE SEMINAR SERIES


## Topic Defence Seminar

**Topic Title :** 1. **Effect of Ambiguity Aversion on Optimal Cutoff Point**  
2. **Self-Protection and Saving under Multiple Dependent Risks**

**Presenter :** **Ms Tian LI**  
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**Abstract :**

- (1) We study the behavior of a decision maker (physician or patient) (DM for short) when she is making a decision on the choice of cutoff point of a test. We first study the effect of ambiguity aversion on the optimal cutoff point in a one-stage model. Then we extend the model to two stages and investigate the behavior of different ambiguity aversion. Finally, we examine the value of information provided by a perfect test that resolves ambiguity. We find that in the setting that higher test outcomes are more associated with a potential disease, for a one-stage decision, a more ambiguity averse DM chooses a lower cutoff point if this act could narrow the differences between expected utilities on the first-order probability within each second-order state. In a two-stage decision, an ambiguity averse DM chooses a lower optimal cutoff point than an ambiguity neutral DM if the DM exhibits constant absolute ambiguity aversion (CAAA) or increasing ambiguity aversion (IAAA). Using a more general two-stage model with nonstandard time preferences, we find that a more ambiguity averse DM chooses a lower cutoff point if he manifests decreasing absolute ambiguity aversion (DAAA). Finally, we present that a more ambiguity averse DM values a perfect test more than a less ambiguity averse DM and the higher the exogenous cutoff point, the more he is willing to pay to eliminate the ambiguity.
- (2) In this paper, I study the behavior of a decision maker when making optimal choices under multiple dependent risks. I first study the interaction of self-protection and saving in a joint decision system. Then I compare the agent's optimal behavior when a background risk is introduced and I investigate how dependence of an income risk or a capital risk on the background risk impacts the optimal choices. Finally, I make comparative analysis when those dependent risk pairs simultaneously experience general stochastic dominance (deterioration). By building a theoretical two-period model which describes the combined time structure of self-protection and saving, I generalize the special cases of previous works on this topic built within an one-period or two-period framework. Moreover, by investigating the relevance of general first-order and second-order stochastic dominance (deterioration) to the demand for self-protection and precautionary saving in a two-tributes, two-period framework, I extend the general settings in the literature about the interaction of prevention and saving under multiple risks to taking account of expectation dependence between risks. At last, I extend the settings of research in this field by incorporating a reference point in the distribution of the random variable. This extension disentangles agent's risk attitudes from the efficiency of the protection and thus helps explain some empirical anomalies of agents' behavior in the expected utility theory.

**Date :** 22 April 2021, Thursday  
**Time :** 10:00 – 11:30 am  
**Venue :** SEK205 & Zoom  Meeting ID: 947 3853 0013 Passcode: 61299645  
link: <https://lingnan.zoom.us/j/94738530013>  
**Language :** English



\*\*\* All are Welcome \*\*\*