Master´s Thesis Evaluation by the Opponent

Title of the Master´s Thesis:

Game Theory in Managerial Decision Making: Applications to the Microfinance Industry

Author of the Master´s Thesis:

Kristine Gyulbudaghyan

Goals of the Master´s Thesis:

To design an optimal credit contract for microfinance credit organizations. This contract aims to maximize expected profit when the future decision of a borrower whether to repay the loan is uncertain.

Evaluation:

	Criteria	Description	Max. points	Points
Content 70%	Output Quality	Results are well presented, discussed - substantiated, relevant and original (i.e. novelty produced by the author). They are of high practical/theoretical relevance.	20	18
	Goals	The goals of the thesis are evident and accomplished.	10	8
	Methodology:	Methods are adequate and used correctly in relation to pre-set goals.	20	19
	Theory/ Conceptualization:	Demonstration of an in-depth understanding of the topic area (state-of-the-art) including key concepts, terminology, theories, definitions, etc. based on a literature survey. Literature review.	20	19
Formal requirements 15%	Structure:	The thesis is a consistent, well-organised logical whole.	3	1
	Terminology:	Linguistic and terminological level.	4	4
	Formalities:	Formal layout and requirements, extent, abstract.	4	3
	Citing:	Quality of citations and reflection of Ephorus results.	4	4
Delivery 15 %	Presentation document:	Is the presentation itself structured in a clear way? Is it appealing and easy to follow? Does it convey the message efficiently?	5	
	Presentation skills:	Are you conveying the message efficiently and timely? Do you use appropriate words, speed, tone of voice, gestures, movement etc. to express your thoughts in a clear manner?	5	

	Argumentation:	Are you able to readily and briskly react to questions or comments? Are you able to explain unclear parts and connect comments to relevant places in your presentation or parts of particular analyses? How well are you able to defend to your ideas and recommendations?	5	
			100	0

Other comments:

I appreciate that the author addresses an important and up-to-date topic using game-theoretic tools. The aim is clearly stated in the abstract. The author demonstrates her knowledge of game theory and statistical techniques. Nevertheless, there are also several areas for improvement.

1) The thesis contains a lot of text unrelated to its goal. Sections 2 and 3 could have been left out: they summarize general theory that can be found in textbooks. Likewise, general information about Armenia (p. 31) is not necessary for the analysis. The relevant part of the thesis begins only on page 32.

2) Instead of summarizing textbooks, the author should have included more literature on microfinance, mechanism design, and contract theory.

3) The thesis is not coherent: instead of being a unified whole, it contains loose pieces of interesting analysis (e.g., supervision game, signaling game). The author should have focused on one issue (the contract design).

4) The thesis' aim is accomplished only partly. Although the signaling game provides relevant analysis, the optimal contract has not been proposed. In particular, the signaling game yields pooling equilibria, which do not allow to distinguish various types of borrowers.

5) It would be useful if the empirical part included explicit hypotheses.

6) The format of the thesis could be improved (e.g., pie charts should be avoided).

Although these comments are critical, I once again appreciate the author's effort to analyze a challenging issue. Her thesis is a good starting point for further research.

Questions or comments to be discussed during the thesis defence:

1] Consider the game on p. 49, Table 8: Explain, why in the outcome (Loan, Cooperate) is Lender's payoff $L \times i$. Why in the outcome (Loan, Default) does Borrower's payoff not include the utility from consumption?

2) The signaling game (p. 55-59) yields only pooling equilibria. Can you suggest a modification of some parameter (e.g., Fee) that would result in a separating equilibrium such that credible Borrower chooses "Secure" and non-credible Borrower chooses "Not secure"?

The name of the Opponent:

Marek Hudík

The employer of the Opponent:

FPH VŠE

Signature of the **Opponent**: