REFEREE'S REVIEW

Program:	Master in Corporate Finance
Student:	Reztsov Vladimir
Title of thesis:	REAL OPTIONS AS A TOOL FOR RISK MANAGEMENT IN ARCTIC SHELF OIL AND GAS PROJECTS: ROSNEFT CASE

Justification of the topic choice. Accuracy in defining the aim and objectives of the thesis. Justification of the topic choice; accuracy in defining the aim and tasks of the thesis; originality of the topic and the extent to which it was covered; alignment of the thesis' topic, aim and objectives.	5			
Structure and logic of the text flow. Logic of research; full scope of the thesis; alignment of thesis' structural parts, i.e. theoretical and empirical parts.		4		
Quality of analytical approach and quality of offered solution to the research objectives. Adequacy of objectives coverage; ability to formulate and convey the research problem; ability to offer options for its solution; application of the latest trends in relevant research are for the set objectives.		4		
Quality of data gathering and description. Quality of selecting research tools and methods; data validity adequacy; adequacy of used data for chosen research tools and methods; completeness and relevance of the list of references.			3	
Scientific aspect of the thesis. Independent scientific thinking in solving the set problem/objectives; the extent to which the student contributed to selecting and justifying the research model (conceptual and/or quantitative), developing methodology/approach to set objectives.			3	
Practical/applied nature of research. Extent to which the theoretical background is related to the international or Russian managerial practice; development of applied recommendations; justification and interpretation of the empirical/applied results.		4		
Quality of thesis layout. Layout fulfils the requirements of the Regulations for master thesis preparation and defense, correct layout of tables, figures, references.		4		

Each item above is evaluated on the following scale, as applicable: 5 = the thesis meets all the requirements, 4 = the thesis meets almost all the requirements, 3 = a lot of the requirements are not met in the thesis, 2 = the thesis does not meet the requirements.

Additional comments:

The topic is important and is under intensive studies. The author provides description of the oil industry and several particular projects. Real options technique in the thesis does not go beyond traditional use of the CRR model. Only generic standard options (to wait, to abandon) are considered. So the novelty (scientific aspect) is almost not present.

Nevertheless, practical importance of such studies, which are very rare in Russia, is not disputable.

Design is logical but survey and original parts are unbalanced. Layout and English have many deficiencies.

Now this is the time to speak about drawbacks in implementation.

- First, oil price volatility is calculated using historical method (based on the data for the last three years only that is difficult to justify). This method is the worst of possible options. Literature recommends GARCH time series analysis, for which all needed data are available in the case of oil. More important is that it is not clear from the thesis (see page 43) what time periods were used for calculation of volatility. Appendix 1 admits to think that it was done with a step of one year that does not capture actual oil price volatility. The correct answer is one day.
- Related to that is the way how CRR is used for analysing early exercise boundary. It is well known that CRR is a numerical approximation of GBM, which is close to it only in the case of very small steps (many periods in the binary tree). Analysis of decisions in Appendices is done for half of a year or one year steps. This does not lead to a good approximation. The shape of early exercise boundary dramatically depends on the number of steps. Since no explanation of calculations is provided in the thesis (which is a serious drawback) it makes proposed decisions concerning the projects unjustified.

Master thesis of Vladimir Reztsov meets the requirements of MCF program, and according to the reviewer's opinion deserves a "good" grade (ECTS grade is D), thus the author can be given the desired degree.

Date: June 13, 2015

Referee: *Professor Alexander Bukhvalov* A Bukhvalov