

REFEREE'S REVIEW

Program:	Corporate Finance
Student:	Alexandra Mikhailina
Title of thesis:	R&D impact on company value: application of real options in pharmaceutical industry

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	4	3	2
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.	5	4	3	2
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.	5	4	3	2
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.	5	4	3	2
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.	5	4	3	2
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.	5	4	3	2
Quality of thesis layout. Layout fulfils the requirements of the Regulations for master thesis preparation and defense, correct layout of tables, figures, references.	5	4	3	2

Each item above is evaluated on the following scale, as applicable: 5 = excellent, 4 = good, 3 = satisfactory, 2 = poor .

Additional comments:

The referred paper examines application of real option valuation methodology to determining expected value of R&D projects in pharmaceutical industry, more specific – in drug development activities. The author gives an extensive review of existing research on real options nature, valuation and application of respective methodology in different industries worldwide, while not mentioning any (or absence of any) research on this topic in Russia. Furthermore the paper seems to ignore any country-specific issues while being based solely on US tax and industry certification systems, though these assumptions are not directly outlined in the text.

The text is well structured and all goals are clearly defined. However the author is claiming to apply the real option model to valuing theoretical project, which in fact is a very specific drug development project undertaken by one of major pharmaceutical companies (Merk) and being now at its final pre-production-launch stage. The author uses assumptions provided by the company, industry research or developed herself with the latter not always properly justified (assumptions regarding revenue distribution at commercialization stage, first-mover advantage on duopoly market, etc.) and even changing in refined model compared to the basic one. Overall the application of the model to value a generalized project lacks justification of basic assumptions used in constructing and applying it, which may lead to biased results.

Improvements suggested by the author to the basic model lead to slightly different estimation of final project value, which may be caused by the above improvements (thus proving their viability), or by change in basic assumptions compared to those in “base case”. Together with some other assumptions that require a more thorough justification, the conclusion regarding refinement of the basic model seems to lack evidence.

The author is mentioning broader implication of the developed model (for instance, in other industries with high R&D potential) while completely ignoring its usefulness for fast-growing segment of molecule-research and clinical testing services, where firms specialize in certain phase of drug development and previous/later phases are carried-out

clinical testing services, where firms specialize in certain phase of drug development and previous/later phases are carried-out by completely different entities. Practical implication of the above research seems also quite promising considering recent development of pharmaceutical sector in Russia, which is unfortunately not mentioned in the thesis at all.

Master thesis of Alexandra Mikhailina meets the requirements of Corporate Finance program, and deserves a “good” grade, thus the author can be given the desired degree.

Date 12/06/2012

Referee: Asc. Professor
Anna E. Loukianova

A handwritten signature in blue ink, appearing to read "Анна Е. Лукиanova".