SCIENTIFIC ADVISOR'S REFERENCE

Program:	Master in Corporate Finance
Student:	Alexandra P. Mikhailina
Title of thesis:	R&D IMPACT ON A 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.
Pharmaceutical companies operate in highly uncertain environment. This uncertainty is caused both in internal and external factors, which depend R&D progress in the company itself and in its rivals. Real Options Analysis (ROA) became unavoidable tool in this area since early 1990s. This explains the importance of the topic and goals, which are clearly formulated in the thesis.
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.
Chapter 1 is devoted to the use of ROA in pharmaceutical industry. Finally the authors comes to the goal justification. In Chapter 2 the basic model by Kellogg&Charnes is formulated and its extension (due to the author) to the case of rivalry is provided. Chapter 3 provides main research material with data simulation and calculations for both versions of the model. Conclusions sum up managerial applications.
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.
Actually the author develops the methodology applicable to any pharmaceutical company where multi-stage planning process has a standard structure. To implement such methodology it is necessary to simulate data needed to cash flows formation. Good outcomes correspond to growth options. Then ROA with the choice of option to abandon (or continue) is used. It is implemented on an uncertainty tree. Techniques is relevant and not easy. It needs intensive use of software. To control the calculations the author uses two different techniques, i.e. decision tree method and binary lattice method. The results confirm the validity of the model and calculations. For her original extended model the author provides realistic scenarios of rivalry. I found the use of existing models and their extension to be important contribution to the area.
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.
Stylized numbers for simulation is always a non-trivial problem because realism depends on typicality of parameters. The author found in public sources important information on a recent Merck project, which became the crucial part of her basic assumptions for simulation. This is outstanding. The reference list is completely adequate.
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.
As it was shown above this really a research type of the thesis. It has great novelty both in modelling and data processing.
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.
More importantly, the author shows her ability to implement ROA in the companies, which is hi-end managerial techniques.
Quality of thesis layout. Layout fulfils the requirements of the Regulations for master thesis preparation and defence, correct layout of tables, figures, references.
Layout fulfils the requirements and of good quality.

The Master thesis of Alexandra P. Mikhailina completely meets the requirements for master thesis of MCF program thus the author of the thesis can be awarded the required degree.

Date: June 12, 2012

Scientific Advisor:
Professor of Finance

Alexander Bukhvalov