



University of Zurich
Swiss Banking Institute

Bachelor Thesis

Realoptionen aus Portfoliosicht

Eine Analyse auf der Ebene der Geschäftsprozesse

1.12.2009

Submitted by Philipp Kramer

Supervised by Beat Affolter

Prof. Dr. Alexander Wagner

Management Summary

Real options analysis is the state of the art method to value projects; it can reflect the management's flexibility and applies consistent risk adjusted discounting. However, the current real options methodology is designed to value individual and independent projects. This is tempting to ignore dependencies among projects. Any dependency on the existing business of a company, other planned projects or changes in customer demand has to be identified and specifically reflected in a handcrafted way – just as one might try to imitate real options approach with the net present value approach¹. This deficiency makes applications in the context of a productive company difficult.

The source of the described deficiency is that the real options valuation technique is by itself not tied to a specific context. This is what makes its application difficult in practice. The solution to this problem is to engineer valuation methods that are specifically targeted to perform capital budgeting on company level. The presented methods can be applied to companies running multiple businesses. The methods can reflect the effects of dependencies among these businesses. Dependencies can be present in the form of capacity limitations as well as economies of scope or scale. The presented valuation approach also allows incorporating the value of managerial flexibility in the same manner as standard real options analysis.

After reviewing related work, the second part of this thesis presents the rationale behind the proposed approach to capital budgeting and derives a class of valuation methods that work on company level. The third part presents two concrete methods and demonstrates example calculations. The methods simulate optimal adjustment of production to demand given capacity limitations. One method works on the level of output volume and the other on the level of customer requests. The validity and the usefulness of the methods is assessed based on the results of the calculation examples. The results of the first method are compared to net present value and real options based approaches. The insights gained from this study shows that the suggested approach to capital budgeting can indeed improve the quality of the results. Furthermore the approach helps to setup appropriate calculations that reflect the relevant aspects of the real world business case.

¹by introducing different cases with different probabilities and discount factors assigned