

## MASTER THESIS

### The Theory of Corporate Finance

Jean Tirole's textbook on the theory of corporate finance is one of the most remarkable additions to the finance literature over the last decade. It offers a single, unified and comprehensive framework and synthesizes corporate finance, contract theory and information economics.

The book however does not always give clear analyses of models and rather displays results and their economic interpretation. A detailed depiction of "the math behind" most topics – such as the optimization programs (in most cases Karush-Kuhn-Tucker optimizations) or the relaxation of some of the basic assumptions (e.g. risk-neutrality, zero-profit of lenders) – is not the purpose of the book.

The main objective of this thesis is to analyze selected models described in Tirole's textbook (e.g. fixed investment model), relax certain assumptions and solve these models rigorously. In this respect, the thesis aims at supporting the development of a generalization of Tirole's basic framework and helping students deepen their understanding of the topic.

The thesis is part of a project conducted by Prof. Martin Ruckes and Dr. Daniel Hoang.

**Prerequisites:** The thesis can be conducted in English or German. Interest in finance theory, game theory or applied economics is required. The thesis may be particularly interesting for students that successfully passed the classes "Corporate Finance 2", "Game Theory", or "Global Optimization". While past attendance in these lectures and knowledge of optimization techniques is an advantage, it is not a prerequisite to successfully complete this master thesis.

The thesis will be closely coached by the advisers.

#### **Literature:**

Tirole, Jean, 2009. The Theory of Corporate Finance. Princeton University Press.

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**Start Date:** At any time

In case of questions please do not hesitate to contact the thesis supervisor in advance.