CURRICULUM VITAE – October 2016

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Date of birth: 28 November 1989
Nationality: Dutch
Languages: Dutch, English (Fluent), German (Basic), French (Basic)
Programming: Wolfram Mathematica, Matlab R, LATEX, Delphi, C++

Research Fields

Primary   Industrial Organization / Microeconomics

Other   Investment under Uncertainty (Real Options Theory), Decision Theory, Game Theory

Education:

2016 Apr-Aug   **University of York** (United Kingdom)
               Visiting scholar, hosted by Prof. dr. Jacco J.J. Thijssen

2013-present   **Tilburg University** (the Netherlands)
               Ph.D. candidate in Economics
               Expected completion: July 2017
               Supervision by Prof. dr. Peter M. Kort and dr. Kuno J.M. Huisman
               N.W.O. grant, jointly with Prof. dr. Herbert Dawid (Bielefeld University)

2012-2013   **Tilburg University** (the Netherlands)
               M.Phil. program, 'Research Master in Finance'

2011-2012   **Tilburg University** (the Netherlands)
               M.Sc. program, 'Quantitative Finance and Actuarial Sciences' (*cum Laude*)

2008-2011   **Tilburg University** (the Netherlands)
               B.Sc. program, 'Econometrics and Operations Research'

Research Paper and Publications:

2014   *Capacity choice in (strategic) real options models: A survey*
               with M.N. Lavrutich, P.M. Kort and K.J.M. Huisman.
               Dynamic Games and Applications, 1–16, 2015.

2016   *Optimal timing of technology adoption: war of attrition versus pre-emption*
               Working Paper, single authored (**job market paper**).
               Under review in RAND Journal of Economics.

2015	*Entry deterrence by timing rather than overinvestment in a dynamic real options framework.*
	with H. Dawid, K.J.M. Huisman and P.M. Kort.
	Under review in International Journal of Industrial Organization.

2013	*Innovation and entry deterrence: strategic investment decisions on uncertain existing markets.*
	Working Paper with H. Dawid, K.J.M. Huisman and P.M. Kort.

Work in Progress:

2016	*Investment under uncertainty in a market with network effects for consumers*
	With J.J.J. Thijssen.

Awards:

2016	**20th Annual International Conference on Real Options**
	Best student paper (job market paper)
	Optimal timing of technology adoption: war of attrition versus pre-emption

2016	**Best teacher award 2015-2016, category: PhD student**
	By Asset-Econometrics, awarded by undergrad students of the program B.Sc. Econometrics and Operations Research

Seminars and conferences:

2016-06	20th Annual International Conference on Real Options (Oslo/Trontheim, Norway)
2015-08	11th World Congress of the Econometric Society (Montreal, Canada)
2015-07	15th Annual SAET Conference on Current Trends in Economics (Cambridge, UK)
2015-06	19th Annual International Conference on Real Options (Athens/Monemvasia, Greece)
2015-05	13th Viennese Workshop on Optimal Control and Dynamic Games (Vienna, Austria)
2015-01	University of Bielefeld (Germany) - seminar
2014-07	16th ISDG Symposium (Amsterdam, the Netherlands)
2014-07	18th Annual International Conference on Real Options (Medellín, Colombia)
2013-present	Attending and/or presenting at seminar session at Tilburg University:
	Finance seminars and Operations Research seminars
	Organizing, attending and presenting: Real Options Research Group (RORG) seminars, weekly

Scheduled:

2017-03	1st Annual YARO workshop (Leipzig, Germany) - organizer
2016-11	Annual INFORMS meeting (Nashville, USA)

Contributions:

2016-2017   Initiator and member of organizing committee for 1st Annual YARO workshop
             with Maximilian Schreiter (HHL Leipzig)

2015-2016   Referee for Journal of Economic Dynamics and Control

Teaching:

2016-present   **Tilburg University** (the Netherlands)
                Lecturer: Stochastic OR Models (B.Sc. Econometrics and OR)

2014-present   **Tilburg University** (the Netherlands)
                Thesis supervision, together with P.M. Kort
                Supervisor, Research Master's Thesis "Innovation and the old market: A real options
                approach", Masha Galperina, Tilburg University (2015).
                Supervisor, Master's Thesis "Investment with Uncertainty and Entry Deterrence: the Iso-
                elastic Demand Case", Kateryna Sogulyayeva, Tilburg University (2014)
                Co-supervisor, Master's Thesis "Strategic Capacity Investment under Uncertainty", Meng
                Zhang, Tilburg University (2014).

2013-present   **Tilburg University** (the Netherlands)
                Workshop sessions provided by the university for high school students

2013-present   **Tilburg University** (the Netherlands)
                Lecturer Mathematics D for high school students

2010-present   **Tilburg University** (the Netherlands)
                Teaching assistant
                        B.Sc. Econometrics and OR: Linear Algebra, Mathematical Analysis 1, Mathematical
                        Analysis 2, Probability and Statistics
                        B.Sc. International Business Administration: Mathematics 2, Statistics 1

2009   **Roncalli Scholengemeenschap** (Bergen op Zoom, the Netherlands)
                Lecturer mathematics HAVO/Athenaeum

2009-present   Tutoring statistics and mathematics (university students)

2008-2015   Exam training mathematics for high school students

2006-2013   **PWH** (Bergen op Zoom, the Netherlands)
                Supportive teaching of high school students

2001-2015   Supportive teaching and personal guidance of high school students, including guidance of students
                with behavioral problems, AD(H)D and guidance with making schedules
                Tutoring of high school students in mathematics, economics, languages and other courses

Other activities:

2016   Organizer departmental trip

2015-2016   Column writer for Nekst, journal of ASSET Econometrics, the Tilburg B.Sc. Econometrics and
                OR study organization

2013   **Tilburg University** (the Netherlands)
                Teacher Training Course for PhD-Students and Junior Lecturers

Other employment:

2008-2012   **Theater Association 'Op de Top'** (Bergen op Zoom, the Netherlands)
Financial leader, board member, treasurer (2010-2012), and director (2011-2012)

2006-2013   **PWH** (Bergen op Zoom, the Netherlands)
(Supportive) teaching of high school students

References:

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Abstracts

Optimal timing of technology adoption: war of attrition versus pre-emption (job market paper)
Awarded best student paper at the 20th Annual International Conference on Real Options.
Working paper.

This paper considers two incumbent firms with an option to adopt an innovative technology. The firms engage in a Stackelberg competition where they decide upon both the investment moment and the investment size. I find that there is only a first-mover advantage when the degree of innovation is large or when the new technology produces a close substitute. Otherwise, firms face a second-mover advantage. This happens even when there is no information spillover, imperfect information or any type of asymmetry. When such a second-mover advantage is present, firms either want to stay alone in the old market or want to set a larger capacity as Stackelberg follower. This paper also shows that market uncertainty decreases the second-mover advantage, but has no influence on whether the late mover adopts.

Entry deterrence by timing rather than overinvestment in a dynamic real options framework.
Working Paper with H. Dawid, K.J.M. Huisman and P.M. Kort.
Under review in International Journal of Industrial Organization.

This paper examines a dynamic incumbent-entrant framework with stochastic evolution of the (inverse) demand, in which both the optimal timing of the investments and the capacity choices are explicitly considered. We find that the incumbent invests earlier than the entrant and that entry deterrence is achieved through timing rather than through overinvestment. This is because the incumbent invests earlier and in a smaller amount compared to a scenario without potential entry. If, on the other hand, the capacity size is exogenously given, the investment order changes and the entrant invests before the incumbent does.

Capacity choice in (strategic) real options models: A survey
with M.N. Lavrutich, P.M. Kort and K.J.M. Huisman. Dynamic Games and Applications, 1–16, 2015.

The theory of real options determines the optimal time to invest in a project of given size. As a main result, it is found that in a more uncertain environment, it is optimal for a firm to delay its investment. In other words, uncertainty generates a value of waiting. Recently, contributions appeared that in addition determine the optimal size of the investment. This paper surveys this literature. As a general result, it is obtained that more uncertainty results in larger investments taking place at a later point in time. So, where from the traditional real options literature one can conclude that uncertainty is bad for growth, this is not so clear anymore when also the size of the investment needs to be determined. The survey consists of two parts. First, we present single firm models, and second, we give an overview of the oligopoly models that have appeared up until now.

Innovation and entry deterrence: strategic investment decisions on uncertain existing markets.
Working Paper with H. Dawid, K.J.M. Huisman and P.M. Kort.

This paper studies asymmetric firms that consider an innovative investment in an established market. Conjoining capacity choice, asymmetry among firms, and an innovative market, brings up a new, more profound, model to evaluate firms' investing behavior in a competitive, uncertain dynamic duopoly setting. An investment comprises both optimal timing and setting capacity.
We show that endogenizing capacity choice induces some new results. In great contrast to models where capacity size is given, we find that larger firms have more incentives to invest and innovate. Larger firms then set small investment quantities in order to obtain a temporary monopoly position. This leads to the general result that large firms lead innovation, but take the smallest stake on new products on established markets.