

23rd Annual International Conference

Real Options

Theory Meets Practice

Organized by

Real Options Group
King's Business School, King's College London

In cooperation with

Northwestern University and
University of California at Los Angeles

June 27 - 29, 2019
London, UK

Program Sessions Summary Guide

DAY 1 - THURSDAY, JUNE 27

Track I (8th floor North)		Track II (2nd floor Room 203)	
8:15-9:00 Registration & President's Welcome			
9:00-10:15 Infrastructure & Public Policy		9:00-10:15 Mining, Oil & Gas	
10:45-12:00 Project Management		10:45-12:00 Petroleum Models I	
12:00-2:00 Luncheon			
2:00-3:15 Abandonment/Exit Decisions		2:00-3:15 Petroleum Models II	
3:45-5:00 Blockchain Certificates, Licensing & Patent Litigation		3:45-5:00 Wind & Renewable Energy	
5:00-6:00 Panel Discussion: Innovation & Public Policy			

DAY 2 - FRIDAY, JUNE 28

Track I (8th floor North)		Track II (4th floor Amphitheater)	
9:00-10:15 Corporate Finance Topics		9:00-10:15 Incentives, Responses & Switching Models	
10:45-12:00 Acquisition, Investment & Financing		10:45-12:00 Investment Life	
12:00 – 1:20 Luncheon			
1:20 – 2:00 Keynote Address by Christopher Loch (Cambridge U.)			
2:00-3:15 Investment Characteristics & Processes		2:00-3:15 Capacity Investment & Competition	
3:45-5:00 Invest., Debt, Credit & Fin. Constraints		3:45-5:00 Human Capital, Signaling & Preemption	

DAY 3 - SATURDAY, JUNE 29

Track I (8th floor North)		Track II (4th floor Amphitheater)	
9:00-10:15 Valuation Issues		9:00-10:15 Numerical Methods	
10:45-12:00 Best Student Papers Session		10:45-12:00 Business Planning Models	
12:00-1:00 Panel Discussion: Current State, Challenges and Future Prospects			

PROGRAM SESSIONS

DAY 1 – THURSDAY JUNE 27

8:15 – 8:45 REGISTRATION & COFFEE

8:45 – 8:55 PRESIDENT’S WELCOME

9:00 – 10:15 TRACK I

INFRASTRUCTURE & PUBLIC POLICY

Chairperson: Maria Lavrutich (NTNU, Norway)

Optimal Infrastructure Investment with Conflicting Objectives under Uncertainty

M. Lavrutich and V. Hagspiel (Norwegian U. of Science and Technology, Norway)

Infrastructure Financing with Price Externality: Public Transport in Hong Kong

H. Bai (Jin Bao Chuang FinTech Corp, China) and B. Chevalier-Roignant (Cranfield U., UK)

Pollution Abatement Planning when Abatement Technology is Ambiguous

M. Tsujimura (Doshisha U.) and H. Yoshioka (Shimane U., Japan)

9:00 – 10:15 TRACK II

MINING, OIL & GAS

Chairperson: Yuri Lawryshyn (U. of Toronto, Canada)

Evaluation of Tailings Dam Failure in Mining Operations

M. Armstrong (U. of Chile), N. Langrené and W. Chen (CSIRO, Australia), R. Petter and C. Petter (Federal U. of Rio Grande do Sul, Brazil)

Exercise Boundary-based Simulation with Application to Multi-Option Mining Investments

M. Kozlova (Lappeenranta U. of Technology, Finland), Y. Lawryshyn (U. of Toronto, Canada) and A. Bashiri (Active Equities at CPP Investment Board, Canada)

Volatility Estimation of Exploratory Projects in Unconventional Oil & Gas

L.A. Mogollon (Ecopetrol, Colombia)

10:15 – 10:45 MORNING COFFEE BREAK

10:45 – 12:00 TRACK I

PROJECT MANAGEMENT

Chairperson: Mikael Collan (Lappeenranta U. of Technology, Finland)

Capacity Expansion and Term Extension in Public Infrastructure Concessions

C. Bastian-Pinto, N. Marques, L.E. Brandão and R. Igrejas (PUC-Rio, Brazil)

Phasing Construction Projects: Applying Fuzzy Logic and System Dynamics

M. Collan and J. Savolainen (Lappeenranta U. of Technology, Finland)

Project Management with Technological Risk: An Application

A. Sadeh (Holon Institute of Technology, Israel)

10:45 – 12:00 TRACK II

PETROLEUM MODELS I

Chairperson: Gonzalo Cortazar (PUC-Chile)

Two-Factor Oil Price Process and Sequential Exploration with Geologically Dependent Prospects

B. Jafarizadeh (U. of Greenwich, UK)

Time-Varying Term Structure of Oil Risk Premiums

G. Cortazar, P. Liedtke, H. Ortega (PUC-Chile) and E. Schwartz (UCLA, USA)

Discount Rates and Price Forecasts for Petroleum Valuation

B. Jafarizadeh (U. of Greenwich, UK)

12:00 – 2:00 LUNCHEON

2:00 – 3:15 TRACK I

ABANDONMENT/EXIT DECISIONS

Chairperson: Jacco Thijssen (U. of York, UK)

Venture Capitalist's Entry-Exit Investment Decisions

R.M. Ferreira and P.J. Pereira (U. of Porto, Portugal)

Optimal Abandonment of a Construction Project of Uncertain Duration: UK's High-speed Rail

J. Thijssen (U. of York, UK)

Investment Options in Wind Turbines: Life-extension versus Repowering

K. Flatland, M. Hove, M. Lavrutich and R. Nagy (Norwegian University of Science & Technology, Norway)

2:00 – 3:15 TRACK II

PETROLEUM MODELS II

Chairperson: Marco A.G. Dias (PUC-Rio)

Estimation of Petroleum Reserves: Comparing Methods

M.A.G. Dias (PUC-Rio) and R.E. Penha Borges (Petrobras and U. Federal do Rio Grande do Norte, Brazil)

Offshore Drilling Rigs and Operating Strategy: Invest, Operate, Lay-up or Scrap in Oversupply

N. Cihangir Martin and L.E. Brandão (PUC-Rio, Brazil)

Mature Oil Field Rescale: Abandoning vs. Switching to Lower-cost Technology when Prospects Deteriorate

R. Adkins (U. of Bradford) and D. Paxson (U. Manchester, UK)

3:15 – 3:45 AFTERNOON COFFEE BREAK

3:45 – 5:00 TRACK I

BLOCKCHAIN CERTIFICATES, LICENCING & PATENT LITIGATION

Chairperson: Elizabeth Whalley (U. of Warwick, UK)

Renewable Energy Certificate Tokens in the Blockchain

N. Marques, L. Gomes, L.E. Brandão and J.P. Brandão (PUC-Rio, Brazil)

Innovation, Licensing and Competition Under Imperfect Appropriation Regime

B. Chevalier-Roignant (Cranfield U., UK), T. Chi (U. of Kansas, USA) and L. Trigeorgis (King's College London and U. of Cyprus)

Firms' Settlement Options and Strategies in Patent Litigation

D. Lin, D. Liu and E. Whalley (U. of Warwick, UK)

3:45 – 5:00 TRACK II

WIND & RENEWABLE ENERGY

Chairperson: Luiz E. Brandão (PUC-Rio, Brazil)

The Effect of Price and Quantity Correlation on Wind Farm Investments

A. Mutaka (Office of V.P. Ghana), A. Azevedo (Aston U.) and I. El Kalak (Cardiff U., UK)

Switch Option for Wind Farms: Mining Cryptocurrencies

C. Bastian-Pinto, F. Araujo, L.E. Brandão and L. Gomes (PUC-Rio, Brazil)

Bidding in a Renewable Energy Resources Auction in Peru

F. Yarma Lapoint and S. de Santana Mendonça (U. ESAN, Peru)

5:00 – 6:00 PANEL DISCUSSION: INNOVATION & PUBLIC POLICY

Moderator: Luiz E. Brandão (PUC-Rio, Brazil)

Panelists Include:

Stein-Erik Fleten (NTNU, Norway)

Hamed Ghoddusi (Steven Institute of Tech, USA)

Yuri Lawrychyn (U. of Toronto, Canada)

Onno Lint (Morphotonics B.V., Netherlands)

Dean Paxson (U. of Manchester, UK)

Linda Peters (U. of Antwerp, Belgium)

DAY 2 – FRIDAY JUNE 28

9:00 – 10:15 TRACK I

CORPORATE FINANCE TOPICS

Chairperson: Arkadiy Sakhartov (U. of Illinois at Urbana-Champaign, USA)

Optimal Due Diligence and Economies of Scope in Corporate Acquisitions

J. Reuer (U. of Colorado) and A. Sakhartov (U. of Illinois at Urbana-Champaign, USA)

Cost of Equity Investment with a Convertible Note in Second Round of Entrepreneurial Financing

Y. Imai (U. of Caen Normandy, France)

Credit Risk, Lender Control Rights and Embedded Options in Debt-financed Infrastructure Projects

C.A. Zapata and C.A. Mejía (U. Externado de Colombia)

9:00 – 10:15 TRACK II

INCENTIVES, RESPONSES & SWITCHING MODELS

Chairperson: Stein-Erik Fleten (NTNU, Norway)

The Impact of Capacity Payments on the Usage of Flexible Peaking Generators in PJM Interconnection
S.-E. Fleten, B. Fram, M. Ledsaak, S. Mehl (Norwegian University of Science and Technology, Norway) and C.J. Ullrich (James Madison U., USA)

Motbballing in a Duopoly: Understanding OPEC's Market Response to the Shale Oil Revolution
N. Comincioli (U. of Brescia, Italy), V. Hagspiel (NTNU, Norway), P.M. Kort (Tilburg U., Netherlands), F. Menoncin and S. Vergalli (U. of Brescia, Italy)

Turning-point Detection of Transition Probabilities for Optimal Investment under Regime Switching
L. Sendstad (NTNU, Norway), M. Chronopoulos (City U. of London, UK) and Y. Li (U. of Bergen, Norway)

10:15 – 10:45 MORNING COFFEE BREAK

10:45 – 12:00 TRACK I

ACQUISITION, INVESTMENT & FINANCING STRATEGIES

Chairperson: Artur Rodrigues (U. of Minho, Portugal)

Interaction of Investment and Financing Decisions with Costly Reversibility in Liquidation
T. Shibata (Tokyo Metropolitan U.) and M. Nishihara (Osaka U., Japan)

Optimal Timing and Debt Ratio in Leveraged Buyouts
M. Goto (Hokkaido U.), R. Takashima (Tokyo U. of Science) and M. Tsujimura (Doshisha U., Japan)

Partial Ownership (Toehold) M&A Strategies and Dynamic Games
E. Lukas (U. Magdeburg, Germany), P.J. Pereira (U. of Porto) and A. Rodrigues (U. of Minho, Portugal)

10:45 – 12:00 TRACK II

INVESTMENT LIFE

Chairperson: Neophytos Lambertides (Cyprus U. of Technology)

Effect of Finite Project Life and Option Duration on the Timing and Size of Capacity Investment
A. Balter, K. Huisman and P. Kort (Tilburg U., Netherlands)

Entrepreneurial Effort Allocation and R&D Investment Life-cycle
P. J. Pereira and N. da Rocha Borges (U. of Porto, Portugal)

Preferential Exit Claims and Skewed Returns in Venture Capital Investment
J. Kaboth, M. Schreiter, B. Schwetzler (HHL Graduate School of Management Leipzig, Germany) and A. Lodowicks (Free U. of Berlin, Germany)

12:00 – 1:15 LUNCHEON

1:15 – 2:00 KEYNOTE ADDRESS BY CHRISTOPH LOCH (U. OF CAMBRIDGE)

2:00 – 3:15 TRACK I

INVESTMENT CHARACTERISTICS & PROCESSES

Chairperson: Dean Paxson (U. of Manchester, UK)

Lumpy Upfront versus Staged Investment under a Production Cap

R. Adkins (U. of Bradford) and D. Paxson (U. of Manchester, UK)

Investment with Decreasing Cost due to Technological Innovation Improvements

C. Nunes (IST and CEMAT, Portugal), C. Oliveira (ISEG and Grupo de Física Matemática, Portugal) and R. Pimentel (RISE SICs, Sweden)

Competitive Investment with Varying Risk Premia

F. Armerin and Å. Gunnelin (KTH, Sweden)

2:00 – 3:15 TRACK II

CAPACITY INVESTMENT & COMPETITION

Chairperson: Richard Ruble (EMLYON, France)

Invested Capital Divisibility and Competitive Preemption with Endogenous Sunk Cost

R. Ruble (EMLYON and GATE-LSE (CNRS), France)

Investment Timing and Capacity Decisions with Time-to-Build in a Duopoly Market

H. Jeon (Tokyo U. of Science, Japan)

Strategic Capacity Investment with Output Flexibility

X. Wen (Bielefeld U., Germany), K. Huisman and P. Kort (Tilburg U., Netherlands)

3:15 – 3:45 AFTERNOON COFFEE BREAK

3:45 – 5:00 TRACK I

INVESTMENT, DEBT, CREDIT & FINANCIAL CONSTRAINTS

Chairperson: Lenos Trigeorgis (King's College London & U. of Cyprus)

Optimal Investment Timing, Capacity and Debt Policy for a Financially Constrained Entrant
H. Dawid (Bielefeld U., Germany), N. Huberts (U. of York, UK), K. Huisman (Tilburg U. & ASML, Netherlands), P. Kort (Tilburg U. & Antwerp U., Netherlands) and X. Wen (Bielefeld U., Germany)

Outsourcing Flexibility under Financial Constraints
J.J. Choi (Temple U., USA), M. Ju (Louisiana Tech U.), L. Trigeorgis (King's College London & U. of Cyprus) and X.T. Zhang (Saint Mary's College of California, USA)

Optimal Bank Credit Line under Heterogeneous Risk Beliefs
N. Koussis (Frederick U., Cyprus) and S. Martzoukos (U. of Cyprus)

3:45 – 5:00 TRACK II

HUMAN CAPITAL, SIGNALING & PREEMPTION GAMES

Chairperson: Hamed Ghoddusi (Stevens Institute of Technology, USA)

Optimal Investment in Human Capital and Brain Drain under Migration Uncertainty
H. Ghoddusi (Stevens Institute of Technology) and B. Siyahhan (U. Paris-Saclay, France)

A Signaling Game of Equity Financing under Information Asymmetry
Q. Wang and Y.K. Kwok (Hong Kong U. of Science and Technology)

Preemption Strategy: Gazprom and the Threat of US LNG Mass Entry in Europe
S. Boussena, O. Ionescu and C. Locatelli (U. Grenoble-Alpes, France)

DAY 3 – SATURDAY JUNE 29

9:00 – 10:15 TRACK I

VALUATION ISSUES

Chairperson: Tarik Driouchi (King's College London, UK)

The Role of Correlation in Choosing Output Price and Production Cost for Optimal Investment
Y. Maoz (Open U. of Israel) and A. Bar-Ilan (Haifa U., Israel)

Optimal Project Upgrade and Product Switching: Balancing Risk and Reward
T. Olsen and V. Hagspiel (Norwegian University of Science and Technology, Norway)

Forecast Accuracy and Explainability of Accounting-based (Non)Linear Equity Valuation Models
M. Chen (Lancaster U.), C. Clubb and T. Driouchi (King's College London, UK)

9:00 – 10:15 TRACK II

NUMERICAL METHODS

Chairperson: Motoh Tsujimura (Doshisha U., Japan)

Trade Credit Contract Design

F. Silaghi (Autonomous U. of Barcelona, Spain) and F. Moraux (U. Rennes, France)

Exercise Boundary Fitting in Real Option Valuation of Complex Mining Investments

M. Davison (U. of Western Ontario) and Y. Lawryshyn (U. of Toronto, Canada)

Stochastic Optimal Control Subject to Ambiguous Jump Intensity

H. Yoshioka (Shimane U.) and M. Tsujimura (Doshisha U., Japan)

10:15 – 10:45 MORNING COFFEE BREAK

10:45 – 12:00 TRACK I

BEST STUDENT PAPERS SESSION

Chairperson: Stein-Erik Fleten (NTNU, Norway)

Optimal Capital Structure with Illiquidity and Over-indebtedness: Theory and Evidence

T. Kutzker (U. of Cologne) and M. Schreiter (HHL Leipzig, Germany)

Financial Policies and Internal Governance with Heterogeneous Risk Preferences

S. Chen and B. Lambrecht (U. of Cambridge, UK)

Optimism, Order and Timing of Entry in Duopoly

E. Whalley and Z. Zhang (U. of Warwick, UK)

10:45 – 12:00 TRACK II

BUSINESS PLANNING MODELS

Chairperson: Makoto Goto (Hokkaido U., Japan)

Entrepreneurial Business Planning with Optimal Portfolio, Consumption and Exit Decisions

B.-G. Jang (POSTECH, South Korea), H.-T. Lee (Korea Asset Management Corp, South Korea) and S. Park (Loughborough U., UK)

Risk-neutral Demand Forecast and Real Options Valuation: The Case of Crude Oil Production

A.M. Gambaro (U. del Piemonte Orientale, Italy), I. Kyriakou (City U. of London) and G. Fusai (U. del Piemonte Orientale & City U. of London)

Non-monotonic Impact of Volatility on Option Prices: Managerial Compensation with Risk Shifting
H. Ghoddusi (Stevens Institute of Technology) and S. Dashmiz (Columbia U., USA)

12:00 – 1:00 PANEL DISCUSSION: CURRENT STATE & FUTURE PROSPECTS

Moderator: Yuri Lawryshyn (U. of Toronto, Canada)

Panelists Include:

Mikael Collan (Lappeenranta U. of Technology, Finland)

Gonzalo Cortazar (PUC-Chile)

Peter Kort (Tilburg U., Netherlands)

Bart Lambrecht (U. of Cambridge, UK)

Paulo Pereira (U. of Porto, Portugal)

Motoh Tsujimura (Doshisha U. Japan)

Elizabeth Whalley (U. of Warwick, UK)

1:00 BEST STUDENT PAPER AWARD & CLOSING REMARKS

CONFERENCE CONCLUDES

Conference Venue and Logistics

VENUE

The conference is hosted at the 8th Floor North of historic Bush House at the Strand campus of King's College London, 30 Aldwych Street, London WC2B 4BG.

<https://www.kingsvenues.com/Conferences-Meetings/Bush-House/Bush-House>. It is located in the heart of London near the buzzing shopping/tourist area of Covent Garden and the theater district of West End. The city of London is a global financial, commercial and cultural center offering everything for any type of visitor, family member and taste.

FEES & REGISTRATION

Fees are €540 if register by April 25. Registration fees go up by 20% to €650 afterwards. Participants also registering for the academic conference, are entitled to a 40% discount (i.e., pay extra €60) if register by April 25 (€100 afterwards). Registration should be made online via the conference website www.realoptions.org

IMPORTANT ADMINISTRATIVE INFORMATION

Registration fees include the conference program and other materials, coffee breaks and lunches. Cancellations made in writing by May 15 can be refunded except for a 15% service charge. Those not attending or canceling after May 15 are responsible for the whole fee. The organizers reserve the right to make changes to the program without notice. Only registrations paid by April 25 are guaranteed and be included on the list of participants. For information on registration and other general-type conference-related inquiries contact Eugenia at e-mail conference.registration@realoptions.org, tel +357 22893605. For information on local logistics, King's College London or London contact Prof. Tarik Driouchi at email tarik.driouchi@kcl.ac.uk

HOTEL AND VISA

The recommended hotel is Strand Palace Hotel, 372 Strand WC2R 0JJ, which is located near the venue and the central Convent Gardens area and has offered discounted group rates to the conference (code REALOPTIONS is needed). For more info about the hotel, group rates and reservation, as well as alternative hotel suggestions, see the conference website at <http://www.realoptions.org/venue2016/index.html> For those who need a visa for the UK, please make advance provisions to obtain a timely visa. If a confirmation letter is needed from us, please contact conference.registration@realoptions.org

ORGANIZERS

Lenos Trigeorgis (King's College London, U. of Cyprus and ROG), Tarik Driouchi and Paul Guest (King's College London); VP Program: Gordon Sick (U. of Calgary).