

Real Option Analysis

Topics: Capacity Options (A1, C1, D1, E1) • Global Supply Chains in the Automotive Industry (A2, D2) • Market Entry (A3, C3, D3) • Operational Hedging (A4, B4, C4) • Promotion Demand Forecasting (A5) • R&D Project Management (A6, C6, D6) • Supply Risk Management (A7, C7, D7)

🏆 Research Award

Refereed Articles (A)

ERIM Journal Ranking: **4 STAR**-rated articles that appeared in *Management Science*, *Operations Research* and *Production & Operations Management*; **4 P**-rated articles that appeared in *Decision Sciences* and *European Journal of Operational Research*; **3 S**-rated articles that appeared in *International Journal of Production Economics*, *Naval Research Logistics* and *OR Spectrum*

1. Capacity Options

- a. Hellermann, Rolf; Huchzermeier, Arnd; Spinler, Stefan (2013): Options contracts with Overbooking in the Air Cargo Industry. *Decision Sciences*, 44(2), April, 297-327, and <https://doi.org/10.1111/deci.12008>
- b. Spinler, Stefan; Huchzermeier, Arnd (2006): The Valuation of Options on Capacity with Cost and Demand Uncertainty. *European Journal of Operational Research*, 171(3), 915-934, and <https://doi.org/10.1016/j.ejor.2004.11.017>
🏆 a
- c. Spinler, Stefan; Huchzermeier, Arnd; Kleindorfer, Paul R. (2004): Kapazitätsoptionen für kapitalintensive Technologien und Dienstleistungen: Anwendungen in der Transportindustrie. *Journal of Business Economics: Zeitschrift für Betriebswirtschaft (Special Issue I: Production of Services)*, 49-66
- d. Spinler, Stefan; Huchzermeier, Arnd; Kleindorfer, Paul R. (2003): Risk Hedging via Options Contracts for Physical Delivery. *OR Spectrum (Special Issue on Risk Management)*, 25(3), 379-395

2. Global Supply Chains in the Automotive Industry

- a. Häntschi, Marius; Huchzermeier, Arnd (2016b): Transparency of Risk for Global and Complex Network Decisions in the Automotive Industry. *International Journal of Production Economics*, 175, May, 81-95, and <https://doi.org/10.1016/j.ijpe.2016.02.010> 🏆 b
- b. Häntschi, Marius; Huchzermeier, Arnd (2013): Identifying, analyzing, and assessing risk in the strategic planning of a production network: the practical

view of a German car manufacturer. *Journal of Management Control: Zeitschrift für Planung und Unternehmenssteuerung*, 24(2), 125-158


3. Market Entry

- a. Chevalier-Roignant, Benoît; Flath, Christoph; Huchzermeier, Arnd; Trigeorgis, Lenos (2011): Strategic investment under uncertainty: a synthesis. *European Journal of Operational Research*, 215(3), December, 639-650, and <https://doi.org/10.1016/j.ejor.2011.05.038>

4. Operational Hedging

- a. Cohen, Morris A.; Huchzermeier, Arnd (1999): Global Supply Chain Management: A Survey of Research and Applications. In: Tayur, S., Ganeshan, R.; Magazine, M. (Eds.): *Quantitative Models for Supply Chain Management*, Kluwer Academic Publishers, 669-702
- b. Huchzermeier, Arnd; Cohen, Morris A. (1996): Valuing Operational Flexibility under Exchange Rate Risk. *Operations Research (Special Issue on New Directions in Operations Management)*, 44(1), January-February, 100-113, and <https://doi.org/10.1287/opre.44.1.100>

5. Promotion Demand Forecasting (see also Retail & Business Analytics)

- a. Breiter, Andreas; Huchzermeier, Arnd (2015): Promotion Planning and Supply Chain Contracting in a High-Low Pricing Environment. *Production & Operations Management*, 24(2), 219-236, and <https://doi.org/10.1111/poms.12250> 
- b. Breiter, Andreas; Huchzermeier, Arnd (2010): The New Logic of Truly Efficient Retail Promotions. *International Commerce Review: ECR Journal*, 9(1), Summer, 36-47

6. R&D Project Management

- a. Huchzermeier, Arnd; Loch, Christoph H. (2001): Project Management under Risk: Using the Real Options Approach to Evaluate Flexibility in R&D. *Management Science (Special Issue on Design and Development)*, 47(1), 85-101, and <https://doi.org/10.1287/mnsc.47.1.85.10661>

7. Supply Risk Management

- a. Sting, Fabian; Huchzermeier, Arnd (2014): Operational Hedging and Diversification under Correlated Supply and Demand Uncertainty. *Production & Operations Management*, 23(7), 1212-1226, and <https://doi.org/10.1111/poms.12250>
- b. Sting, Fabian; Huchzermeier, Arnd (2012): Dual Sourcing: Responsive Hedging against Correlated Supply and Demand Uncertainty. *Naval Research Logistics*, 59(1), 69-89, and <https://doi.org/10.1002/nav.21473>
- c. Sting, Fabian; Huchzermeier, Arnd (2010): Ensuring Responsive Capacity: How to Contract with Backup Suppliers. *European Journal of Operational Research*, 207(2), 725-735, and <https://doi.org/10.1016/j.ejor.2010.05.044>

Book (B)

4. Operational Hedging

- a. Huchzermeier, Arnd (1991): *Global Manufacturing Strategy Planning under Exchange Rate Uncertainty*. Unpublished Ph.D. Thesis, UMI, 153 p.

Book Chapters (C)

1. Capacity Options

- a. Spinler, Stefan; Huchzermeier, Arnd (2007): Die Supply Chain der Zukunft in der Konsumgüterindustrie. In: Corsten, H.; Missbauer, H. (Eds.): *Produktions- und Logistikmanagement*. Springer, 507-515
- b. Spinler, Stefan; Huchzermeier, Arnd (2005): Capacity Options: Convergence of Supply Chain Management and Financial Asset Management. In: Frenkel, M.; Hommel, U.; Rudolf, M. (Eds.): *Risk Management: Challenge and Opportunity (2nd Edition)*. Springer, 699-717
- c. Spinler, Stefan; Hellermann, Rolf; Huchzermeier, Arnd; Kleindorfer, Paul R. (2003): Optionen auf Kapazität: Anwendungen in der Luftfrachtbranche. In: Hommel, U.; Scholich, M.; Baecker, P. (Eds.): *Reale Optionen: Konzepte, Praxis und Perspektiven Strategischer Unternehmensfinanzierung*. Springer, 451-465
- d. Spinler, Stefan; Huchzermeier, Arnd; Kleindorfer, Paul R. (2002): An Options Approach to Enhance Economic Efficiency in a Dyadic Supply Chain. In: Seuring, S.; Goldbach, M. (Eds.): *Cost Management in Supply Chains*. Springer, 349-360

- e. Spinler, Stefan; Huchzermeier, Arnd; Kleindorfer, Paul R. (2001): Optionen auf Kapazität: Anwendungen für E-Transportplattformen. In: Sebastian, H.J.; Grünert, T. (Eds.): *Logistik Management: Supply Chain Management und e-Business*. Vieweg+Teubner Verlag, 305-314

3. Market Entry

- a. Chevalier-Roignant, Benoît; Huchzermeier, Arnd (2012): Capacity-Adjustment Decisions and Hysteresis. In: Hommel, U.; Fabich, M.; Schellenberg, E.; Firnkorn, L. (Eds.): *The Strategic CFO: Creating Value in a Dynamic Market Environment*. Springer, 211-226

4. Operational Hedging

- a. Huchzermeier, Arnd (2005): The Real Option Value of Operational and Managerial Flexibility in Global Supply Chain Networks. In: Frenkel, M.; Hommel, U.; Rudolf, M. (Eds.): *Risk Management: Challenge and Opportunity (2nd Edition)*. Springer, 609-629
- b. Huchzermeier, Arnd (2003): Bewertung von Realloptionen in globalen Produktions- und Logistiknetzwerken. In: Hommel, U.; Scholich, M.; Baecker, P. (Eds.): *Reale Optionen: Konzepte, Praxis und Perspektiven Strategischer Unternehmensfinanzierung*. Springer, 317-339
- c. Huchzermeier, Arnd (2001): Bewertung von Realloptionen in globalen Produktions- und Logistiknetzwerken. In: Hommel, U.; Scholich, M.; Vollrath, R. (Eds.): *Realloptionen in der Unternehmenspraxis: Wert schaffen durch Flexibilität*. Springer, 207-230
- d. Huchzermeier, Arnd (2000): The Real Option Value of Operational and Managerial Flexibility in Global Supply Chain Networks. In: Frenkel, M.; Hommel, U.; Rudolf, M. (Eds.): *Risk Management: Challenge and Opportunity*. Springer, 181-201
- e. Cohen, Morris A.; Huchzermeier, Arnd (1999): Global Supply Chain Network Management under Price / Exchange Rate Risk and Demand Uncertainty. In: Muffato, M.; Pawar, K.S. (Eds.): *Logistics in the Information Age*. SGE Ditoriali, 219-234
- f. Cohen, Morris A.; Huchzermeier, Arnd (1999): Global Supply Chain Strategy Planning: Management Tools and Field Research. In: Deutsch-Amerikanisches Akademisches Konzil (Eds.), *TransCoop Across the Atlantic*. Vol. 8, 40-41
- g. Huchzermeier, Arnd (1999b): Logistik und Globale Produktion (Global Supply Chain Management). In: Weber, J.; Baumgarten, H. (Eds.): *Handbuch Logistik: Management von Material- und Warenflussprozessen*. Schäffer Poeschl Verlag, 886-899

- h. Huchzermeier, Arnd (1996): Globale Produktion (Global Manufacturing). In: Kern, W.; Schröder, H.H.; Weber, J. (Eds.): *Handwörterbuch der Produktionswirtschaft*. Schäffer Poeschl Verlag, 577-588
- i. Huchzermeier, Arnd (1994): Global Supply Chain Competition. In: Chakravarty, A. (Ed.): *Proceedings of Symposium on Globalization of Technology, Manufacturing and Service Operations*. Tulane University, 37 p.
- j. Huchzermeier, Arnd (1993): International Operations Management. In: Center for International Business Education and Research (CIBER) of Georgetown University (Ed.): *Proceedings of the Symposium on Globalization of Operations Management*. 10 p.

6. R&D Project Management



- a. Loch, Christoph H.; Huchzermeier, Arnd (2001): Hiding Behind Risk in Fear of Innovation. In: Pickford, J. (Ed.): *Mastering Risk*. Prentice Hall, 147-151
- b. Huchzermeier, Arnd; Loch, Christoph H. (2000): Evaluating R&D Projects as Learning Options: Why More Variability is Not Always Better. In: Wildemann, H. (Ed.): *Produktion und Controlling*. Transfer-Centrum-Verlag, 185-197
- c. Huchzermeier, Arnd (1999a): When to Mass-Customize and When to Mass-Produce: Using the Real Options Approach to Evaluate Product Variety and Pricing Decisions. In: Nagel, K.; Erben, R.F.; Piller, F.T. (Eds.): *Produktionswirtschaft 2000 – Perspektiven für die Fabrik der Zukunft*. Springer, 104-114

7. Supply Risk Management

- a. Sting, Fabian; Braun, Marc; Huchzermeier, Arnd (2010): Simulationsstudie: Exogene Risiken in der Beschaffung – Diversifikation und Flexibilität. In: Bogaschewsky, R.; Eßig, M.; Lasch, R.; Stölzle, W. (Eds.): *Supply Management Research: Aktuelle Forschungsergebnisse 2009*. Springer, 147-171

Dissertations & Habilitation (D)

1. Capacity Options

- a. Brosch, Rainer (2008): *Portfolios of Real Options*. Springer, 156 p.  d
- b. Spinler, Dr. Stefan (2008): *Supply Chain Operations in the Presence of Long-term and Spot Markets*. Unpublished Quasi-Cumulative Habilitation, WHU – Otto Beisheim School of Management, 109 p.
- a. Hellermann, Rolf (2006): *Capacity Options for Revenue Management: Theory and Applications in the Air Cargo Industry*. Springer, 199 p.
- b. Spinler, Stefan (2003): *Capacity Reservation for Capital-Intensive Technologies: An Options Approach*. Springer, 139 p.  e

2. Global Supply Chains in the Automotive Industry

- a. Häntschi, Marius (2014): *Strategic Capacity Planning in the Automotive Industry*. Unpublished Dissertation, WHU – Otto Beisheim School of Management, 149 p.
- b. Smith, Rob (2002): *Global Supply Chain Performance and Risk Optimization: The Value of Real Options Flexibility Demonstrated in the Global Automotive Industry*. Springer, 267 p.

3. Market Entry

- a. Chevalier-Roignant, Benoît (2011): *Investment under Market and Strategic Uncertainty*. Unpublished Dissertation, WHU – Otto Beisheim School of Management, 127 p.

6. R&D Project Management

- a. Artmann, Christian (2009): *The Value of Information Updating in New Product Development*. Springer, 208 p.

7. Supply Risk Management

- a. Sting, Fabian (2010): *Flexible Sourcing: Operational Hedging, Diversification and Contracting under Supply and Demand Uncertainty*. Unpublished Dissertation, WHU – Otto Beisheim School of Management, 136 p.

Management Education (E)

1. Capacity Options

- a. Hellermann, Rolf; Huchzermeier, Arnd (2002): Lufthansa Cargo AG: Capacity Reservation and Dynamic Pricing – Case Study, *The Case Centre*, United Kingdom, 13 p. ☺ f
- b. Hellermann, Rolf; Huchzermeier, Arnd; (2002): Lufthansa Cargo AG: Capacity Reservation and Dynamic Pricing – Teaching Note, *The Case Centre*, United Kingdom, 9 p.

Awards

- ☺ a *Management Science Strategic Innovation Award 2003* (1st Prize), The Association of European Operational Research Societies, Zurich, Switzerland
- ☺ b *Horst Wildemann Prize 2016* (1st Prize granted to first author), Commission of Production Management, German Academic Association for Business Research, Göttingen, Germany
- ☺ c *Science Award 2013* (1st prize granted to second author), European Retail Institute and GS1 Germany, Cologne, Germany
- ☺ d *Best Dissertation Award 2008* (Winner), German Society for Operations Research, Aachen. Germany
- ☺ e *Best Dissertation Award 2003* (Winner), German Society for Operations Research, Aachen. Germany
- ☺ f *Best Case Award 2009 in the category of 'Production and Operations Management'* (Winner), The Case Center, London, United Kingdom