# **College of management of technology**

# Facts & Figures 2017





**Faculty** Members



in Europe in Social Science & **Humanities** Leiden Ranking 2017



women



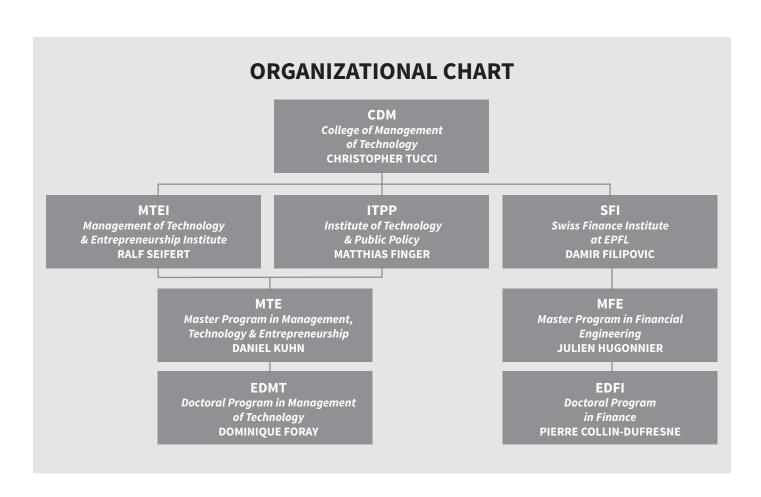
personnel paid from 3<sup>rd</sup> party funds



**Total Master** graduates



Number of organized seminars



## **FOCAL AREAS**

#### **MANAGEMENT**

- Optimization
- Business analytics
- Entrepreneurial strategies
- Management of innovation
- Technology commercialization
- Operations & supply chain management

## **POLICY**

- Energy policy
- Environmental policy
- Green economy
- IP policy
- Technology policy
- Transport policy

### **FINANCE**

- Asset pricing
- Corporate finance
- Financial economics
- · Financial engineering
- Macroeconomics
- Risk management



# **PROFESSORS & EXPERTISE 2017**

# MTEI - Management of Technology & Entrepreneurship Institute



MARC GRUBER

Full Professor Chair of Entrepreneurship & Technology Commercialization (ENTC)

#### **Key words**

- Entrepreneurship
- Technology commercialization
- Innovation
- Strategic management
- Public policy



**DANIEL KUHN** 

Full Professor Chair of Risk Analytics & Optimization (RAO)

#### Key words

- Decision-making under uncertainty
- Stochastic programming & robust optimization
- Uncertainty quantification



RALF SEIFERT

Full Professor Chair of Technology & Operations Management (TOM)

#### **Key words**

- Supply chain strategy
- Supply chain finance
- Technology network management and entrepreneurship



**CHRISTOPHER TUCCI** 

Full Professor Chair of Corporate Strategy & Innovation

### Key words

- Entrepreneurship and corporate venture
- Business model innovation
- Technology strategy
- Technological entry, product development, and «creative destruction»
- Technology policy
- Internet strategy of entrants and incumbents
- «Crowdsourcing» / Web2.0 and innovation
- Corporate governance and innovation



**THOMAS WEBER** 

Associate Professor Chair of Operations, Economics & Strategy (OES)

#### **Key words**

- Credit collections
- Decision making under risk
- Economics (behavioral, environmental, theory)
- Engineering economy
- · Investment criteria
- Nonlinear systems
- Optimal control
- Risk
- · Sharing economy



#### **PHILIPPE WIESER**

Adjunct Professor Chair of Logistics, Economics & Management (LEM)

#### **Key words**

- Supply chain strategies
- Digital supply chain
- · Supply chain innovation
- Flows and resources optimization
- Management of hospital systems
- Project management



**KENNETH YOUNGE** 

Associate Professor Chair of Technology & Innovation Strategy (TIS)

## **Key words**

- Strategic management
- Technology and innovation strategy
- Employee mobility
- New venture creation
- Data science

## ITPP – Institute of Technology & Public Policy



**MATTHIAS FINGER** 

Full Professor Swiss Post Chair in Management of Network Industries (MIR)

#### **Key words**

- De-and regulation of network industries
- Governance of large socio-technical systems
- Infrastructure policy, business-government relations



**BRUNO OBERLE** 

Adjunct Professor Chair of Green Economy & Resource Governance (GERG)

#### **Key words**

- Green economy
- Environmental governance
- Sustainability transitions



**DOMINIQUE FORAY** 

Full Professor Chair of Economics & Management of Innovation (CEMI)

#### Key words

- Economics of innovation
- Science and technology indicators
- Technology policy
- Knowledge-based economy
- Innovation & development
- Smart specialization



**GAÉTAN DE RASSENFOSSE** 

Assistant Professor (Tenure Track) Chair of Innovation & IP Policy (IIPP)

#### **Key words**

- Economics of innovation
- · Intellectual property policy
- · Science of science

## **SFI** – Swiss Finance Institute



PIERRE COLLIN-DUFRESNE

Full Professor Professor of Finance

#### **Key words**

- · Credit & liquidity risk
- · Optimal asset allocation
- · Pricing & hedging



**JULIEN HUGONNIER** 

Associate Professor Professor of Finance

#### **Key words**

- · Asset pricing theory
- Dynamic corporate finance
- · Decision making under uncertainty



RÜDIGER FAHLENBRACH

Associate Professor Professor of Finance

- Corporate finance & governance
- Causes & consequences of the recent financial crisis
- Banking regulation



**LUISA LAMBERTINI** 

Full Professor Chair of International Finance (CFI)

#### **Key words**

- Macroeconomics
- · International finance
- · Monetary & fiscal policy



**DAMIR FILIPOVIC** 

Full Professor Swissquote Chair in Quantitative Finance

## **Key words**

- Quantitative finance
- · Risk & insurance
- Quantitative risk management



**SEMYON MALAMUD** 

Associate Professor Professor of Finance

## **Key words**

- Portfolio selection
- · Non-linear filtering
- · Liquidity and asset prices



**ERWAN MORELLEC** 

Full Professor Professor of Finance

#### **Key words**

- Real options
- Financing & capital structure decisions
- Liquidity management
- · Risk management
- Economics of innovation et corporate governance



REGION	FIELD	EPFL RANK	
CWTS Leiden Ranking 2017¹			
Europe	Social sciences & humanities	4	
World	Social sciences & humanities	17	
The UTD Top 100 Business School Research Rankings (2012 - 2017) <sup>2</sup>			
Switzerland	Top publications in management, OR & finance	2	
Europe	Top publications in management,OR & finance	19	

<sup>&</sup>lt;sup>1</sup> Selected indicators: impact; P, P (top 10%), PP (top 10%) and ordered by PP (top 10%)



	TOTAL	% WOMEN	BUDGETARY FUNDS	3RD PARTY FUNDS
Professors	15.5	6.5%	13.5	2
Full professors	9.5	11%	7.5	2
Associate professors	5	0%	5	0
Assistant professors (tenure track)	1	0%	1	0
Scientific staff	70	36%	41.25	28.75
Adjunct professors	2	0%	1	1
Senior scientists / postdocs	22	23%	9.75	12.25
PhD students	46	43%	30.5	15.5
Administrative & technical staff	21	71%	6	15
Administrative staff	15	93%	4	11
Technical staff	4	0%	2	2
Apprentices	2	50%		2
Total	106.5	38%	60.75	45.75

<sup>&</sup>lt;sup>2</sup> Ranked by number of articles (Journals of Management, Operations and Finance only)



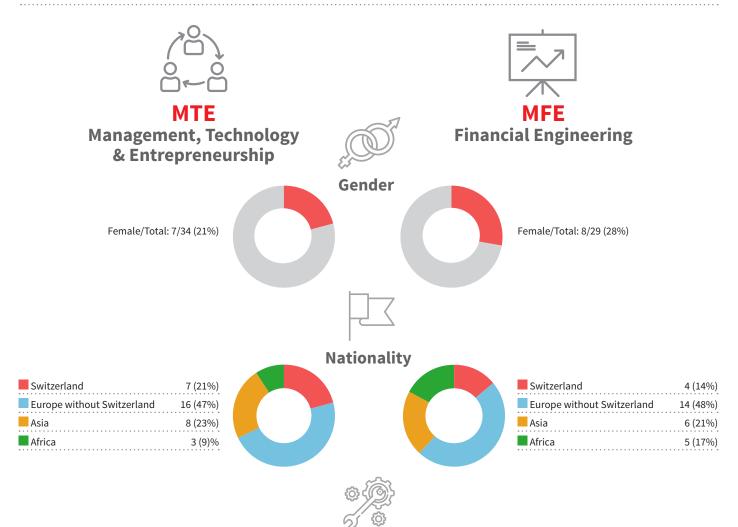
# **Master Programs (MFE-MTE)**

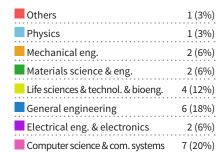
Academic Year 2016/2017

## Management, Technology & Entrepreneurship

## **MFE Financial Engineering**

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Applications	195	208
Admissions	53	53
Enrollments	34	29
With an EPFL degree	12	10
Minor students	192	14
Exchange students	27	3

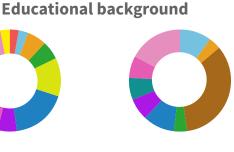




Civil eng.& Environmental eng.

Chemistry & chemical eng.



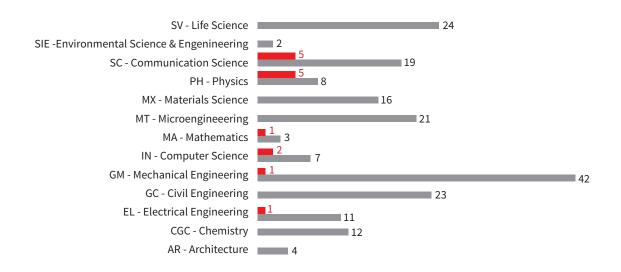


Physics	3 (10%)
Mechanical eng.	1 (4%)
Mathematics	10 (34%)
Materials science & eng.	1 (4%)
General engineering	3 (10%)
Electrical eng. & electronics	2 (7%)
Economics & finance	2 (7%)
Computer science & com. systems	2 (7%)
Civil eng.& Environmental eng.	5 (17%)

8 (23%)



# MTE & MFE Minor students by EPFL section

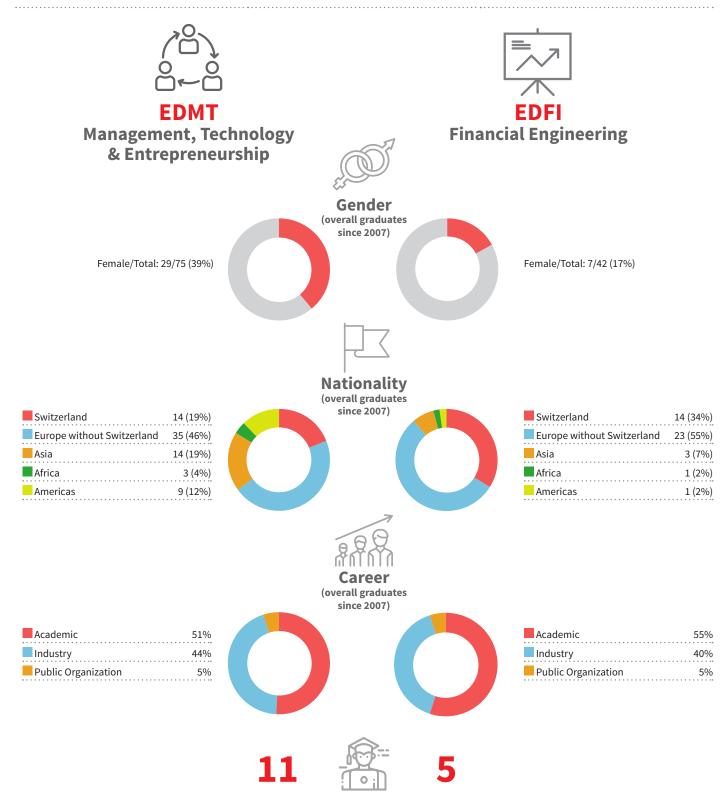




# **Doctoral Programs (EDFI, EDMT)**

**SEPTEMBER 2017 EDMT EDFI Management of Technology** Financial engineering

Applications	148	200
Enrollments	7	3



Number of Thesis awarded in 2017



## **Running / Ending**

MOOC Name	Professor in charge
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Management of Urban Infrastructures	Matthias Finger
Smart Cities – Management of Smart Urban Infrastructures	Matthias Finger
Launching New Ventures (English, French & Chinese versions)	Christopher Tucci and Marc Gruber
Designing a Smart Specialisation Strategy (English & French versions) (1st "pay to get in" MOOC of EPFL)	Dominique Foray
Interest Rate Models	Damir Filipovic
Find the right markets for your innovation - A tool for entrepreneurs and innovators for choosing which markets to play in.	Marc Gruber and Sharon Tal

## In preparation

MOOC Name	Professor in charge
Global Arctic	Matthias Finger
Macroeconomics and Financial Markets	Luisa Lambertini
Engineering Economy	Thomas Weber
Social Entrepreneurship	Marc Gruber, Julia Binder and Nettra Pan



## **Executive Masters**

Program Name	Since	Average number of students per class	Graduates students since inception
Global Supply Chain Management	1993	20-25	over 1200
EPFL Executive MBA (EPFL EMBA)	1998	30	541
Innovative Governance of Large Urban Systems (IGLUS)	2014	20	15

## **Certificates of Advanced Studies**

Global Supply Chain Management (10 ECTS) Healthcare Supply Chain Management (12 ECTS) Management of Biotech, Medtech, Pharma Ventures (10 ECTS)



# **Expenditures in 2017**

Federal funds	68%	10 911 010
Executive education / MOOC's	8%	1 238 846
Sponsored chairs	12%	1 888 539
SNSF	7%	1 041 880
Industry grants	2%	342 640
European programs	2%	385 234
Innosuisse (SCCER)	1%	106 751
CEPF Energy program	1%	96 082
Total		16 010 982



# **Publications**

## Journals

At the origins of learning: Absorbing knowledge flows from within the team. C. Ayoubi, M. Pezzoni and F. Visentin. Journal of Economic Behavior and Organization, 134, 374-387. 2017.

Determinants of PhD holders' use of social networking sites: An analysis based on LinkedIn. S. H. Baruffaldi, G. Di Maio and P. Landoni. Research Policy, 46 (4), 740-750. 2017.

The geography of duplicated inventions: Evidence from patent citations. S. H. Baruffaldi and J. Raffo. Regional Studies, 51 (8), 1232-1245. 2017.

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P. Collin-Dufresne, M. Johannes and L. A. Lochstoer. Review of Financial Studies, 30 (2), 505-538. 2017.

Do exogenous changes in passive institutional ownership affect corporate governance and firm value? C. Schmidt and R. Fahlenbrach. Journal of Financial Economics, 124 (2), 285-306. 2017.

Do independent director departures predict future bad events? R. Fahlenbrach, L. Angie and R. Stulz. Review of Financial Studies, 30 (7), 2313-2358. 2017.

Linear-rational term structure models. **D. Filipovic**, M. Larsson and A.B. Trolle. Journal of Finance, 72 (2), 655-704. 2017.

Model uncertainty and scenario aggregation. M. Cambou and **D. Filipovic**. Mathematical Finance, 27 (2), 534-567. 2017.

Conceptualizing Smart Cities. M. Finger and M. Razaghi. Informatik-Spektrum, 40 (1), 6-13. 2017.

Platformed! Network industries and the new digital paradigm. M. Finger and J. Montero. Competition and Regulation in Network Industries, 17 (3&4). 2017.

What future for the post office network. M. Finger and C. Jaag. Competition and Regulation in Network Industries, 17 (1&2). 2017.

Does inventor centrality foster regional innovation? The case of the swiss medical devices sector. M. Coffano, D. Foray and M. Pezzoni. Regional Studies, 51 (8), 1206-1218. 2017.

Entrepreneurial behavior: A reconceptualization and extension based on identity theory. M. Gruber and I.C. Macmillan. Strategic Entrepreneurship Journal, 11 (3), 271-286. 2017.

New ways of seeing: Elaboration on a theme. J. D. Shaw, P. Bansal and M. Gruber. Academy of Management Journal, 60 (2), 397-401. 2017.

R&D team diversity and performance in hypercompetitive environments. K. Hoisl, M. Gruber and A. Conti. Strategic Management Journal, 38(7), 1455-1477. 2017.

The open innovation research landscape: Established perspectives and emerging themes across different levels of analysis. M. Bogers, A.-K. Zobel, A. Afuah, M. Gruber et al. Industry & Innovation. 24 (1), 8-40. 2017.

Bank capital, liquid reserves, and insolvency risk. J. Hugonnier, E. Morellec. Journal of Financial Economics, 125 (2), 266-285. 2017.

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Expectations-driven cycles in the housing market. L. Lambertini, C. Mendicino and M. T. Punzi. Economic Modelling, 60, 297-312. 2017.

Mortgage default in an estimated model of the U.S. housing market. L. Lambertini, P. Uysal and V. Nuguer. Journal of Economic Dynamics and Control, 76, 171–201. 2017.

Decentralized exchange. **S. Malamud**, M. Rostek. American Economic Review, 107 (11), 3320-3362. 2017.

Stochastic impulse control with regime-switching dynamics. R. Korn, Y. Melnyk and F. T. Seifried. European Journal of Operational Research, 260 (3), 1024-1042. 2017.

Debt enforcement, investment, and risk taking across countries. G. Favara, **E. Morellec**, E. Schroth and P. Valta. Journal of Financial Economics, 123 (1), 22-41. 2017. Corporate policies with permanent and transitory shocks. J.-P. Decamps, S. Gryglewicz, E. Morellec and S. Villeneuve. Review of Financial Studies, 30 (1), 162-210. 2017.

Towards a sustainable development licence to operate for the extractive sector. A. Pedro, E. T. Ayuk, C. Bodouroglou, B. Milligan, P. Ekins and B. Oberle. Mineral Economics, 30 (2), 153-165. 2017.

No money, no honey? Financial versus knowledge and demand constraints on innovation. **G. Pellegrino** and M. Savona. Research Policy, 46 (2), 510-521. 2017.

Reviving demand-pull perspectives: The effect of demand uncertainty and stagnancy on R&D strategy. J. Garcia-Quevedo, G. Pellegrino and M. Savona. Cambridge Journal of Economics, 41 (4), 1087-1122. 2017.

An assessment of how well we account for intangibles. G. de Rassenfosse. Industrial and Corporate Change, 26 (3), 517-534. 2017.

Patent citation data in social science research: Overview and best practices. A. Jaffe and G. de Rassenfosse. Journal of the Association for Information Science and Technology, 68(6), 1360-1374. 2017.

Commercialization strategy and IPO underpricing. S. Morricone, F. Munari, R. Oriani and G. de Rassenfosse. Research Policy, 46 (6), 1133-1141. 2017.

Getting started with PATSTAT register. **G. de Rassenfosse**, M. Kracker and G. Tarasconi. Australian Economic Review, 50 (1), 110-120. 2017.

A test of inventory models with permissible delay in payment. D. Seifert, R.W. Seifert and O.H.D. Isaksson. International Journal of Production Research, 55 (4), 1117-1128. 2017.

Benefits of working capital sharing in supply chains. M. Protopappa-Sieke and R.W. Seifert. Journal of the Operational Research Society, 68 (5), 521-532. 2017.

Building up resilience in a pharmaceutical supply chain through inventory, dual sourcing and agility capacity. F. Lucker and R.W. Seifert. Omega-International Journal of Management Science, 73, 114-124. 2017.

How process industries can improve supply chain performance. P.U. Moser, O. H. D. Isaksson and **R.W. Seifert**. Supply Chain Quarterly, No. 3. 2017.

Inventory dynamics in process industries: An empirical investigation. P. Moser, O.H.D. Isaksson and R.W. Seifert. International Journal of Production Economics, 191, 253-266, 2017.

Optimal dynamic order scheduling under capacity constraints given demand-forecast evolution. I. Biçer and **R.W. Seifert**. Production and Operations Management, 26 (12), 2266-2286. 2017.

Incorporating model uncertainty into optimal insurance contract design. G. C. Pflug, A. Timonina-Farkas, S. Hochrainer-Stigler. Insurance Mathematics & Economics, 73, 68-74. 2017.

A critical assessment of business model research. C.L. Tucci, L. Massa and A. Afuah. Academy of Management Annals, 11 (1), 73-104. 2017.

Entrepreneurial advice sources and their antecedents venture stage, innovativeness and internationalization. B. L. Bastian and C. L. Tucci. Journal of Enterprising Communities-People and Places of Global Economy, 11 (2), 214-236. 2017.

Trust, integrated information technology and new product success. J. E. Ettlie, C.L. Tucci and P. T. Gianiodis. European Journal of Innovation Management, 20 (3), 406-427. 2017.

Competitive and timely food supply combined with operational risk? S. Voldrich, Ph. Wieser and N. Zufferey. Supply Chain Forum: An International Journal, 18 (1). 2017.

Performance versus risk in a food supply chain. **S. Voldrich, Ph. Wieser** and N. Zufferey. Transportation Research Part E: Logistics and Transportation Review (TRE). 2017.

Global optimization on an interval. T.A. Weber. Journal of Optimization Theory and Applications, 172 (2), 684-705. 2017.

Optimal switching between cash-flow streams. **T.A. Weber** Mathematical Methods of Operations Research, 86 (3), 567-600. 2017. Population-level intervention and information collection in dynamic healthcare policy. L.E. Cipriano and T.A. Weber. Health Care Management Science, 21(4), 1-28. 2017.

Smart products for sharing. **T.A. Weber**. Journal of Management Information Systems, 34 (2), 341-368. 2017.

Special section: Technological innovations for communication and collaboration in social spaces. E.K. Clemons, R.M. Dewan, R.J. Kauffman and **T.A. Weber**. Journal of Management Information Systems, 34 (2), 310-313. 2017.

Understanding the information-based transformation of strategy and society. E.K. Clemons, R.M. Dewan, R.J. Kauffman and T.A. Weber. Journal of Management Information Systems, 34 (2), 425-456. 2017.

# **Books & Book Chapters**

Air transport liberalization: A critical assessment. M. Finger and K. Button (Eds.). Edward Elgar, Cheltenham, 2017.

Valuation, recognition, and signaling in the digital public sphere: the TED Talk ranking ecosystem. H. C. Gautschi and **G. Viscusi**. Digital Marketplaces Unleashed, 33-43. 2017.

Where to play: 3 steps for discovering your most valuable market opportunities. M. Gruber and S. Tal. FT Publishing International. 2017.

Optimal financial decision making under uncertainty. G. Consigli, **D. Kuhn**, P. Brandimarte and G. Consigli. Optimal Financial Decision Making under Uncertainty, 255-290. International Series in Operations Research & Management Science 245. 2017.

Lean product development best practices. C. L. Tucci, M. Flores, M. Golob, D. Maklin, and K. Flores. Lugano: Lean Analytics Association, 2017.

Open innovation: An emerging and increasingly important topic. **C. L. Tucci.** In: Europe's Future: Open Innovation, Open Science, Open to the World. 126-130. Brussels: European Commission. 2017. Pro-innovation regulation. **C. L. Tucci**. In: Europe's Future: Open Innovation, Open Science, Open to the World. 145-154. Brussels: European Commission. 2017.

Information technology governance in public organizations. L. Rusu and G. Viscusi (Eds.). Springer International Publishing, Cham, 978-3-319-58977-0, Integrated Series in Information Systems 38. 2017.

Quantifying commitment in Nash Equilibria. T.A. Weber. L.A. Petrosyan and N.A. Zenkevich (Eds.) GTM, Graduate School of Management, St. Petersburg State University, 180-183, 2017.

La Supply Chain pilotée par la prévision. P. Wieser. In: Images de la Logistique, éclairages managériaux et sociétaux. Presses Universitaires Aix-Marseille. 159-164. 2017.

## PhD Theses

Polynomial models in finance. D. Ackerer, D. Filipovic (Dir.). EPFL, Lausanne. 2017.

Three essays on predictability and seasonality in the cross-section of stock returns. V. J. Bogousslavsky, P. Collin Dufresne (Dir.). EPFL, Lausanne. 2017.

Fluid dynamics and outliers: Outstanding performance of high-tech companies in microfluidic technologies. B. A. V. Calisti, P. Wieser (Dir.). EPFL, Lausanne. 2017.

Three essays on methodologies for dynamic modeling of emerging socio-technical systems: The Case of smart grid development. M. A. Dehdarian, C.L. Tucci (Dir.). EPFL, Lausanne. 2017.

Essays in financial economics. C. H. P. Herpfer, R. Fahlenbrach (Dir.). EPFL, Lausanne. 2017.

Improving firm performance through sustainable operations. M. Kirci, R.W. Seifert (Dir.). EPFL, Lausanne. 2017.

Digital transformation, business models and the postal industry. N. H. Kollara, M. Finger (Dir.). EPFL, Lausanne. 2017.

Environmental innovation, policy and economic performance. C. Pellegrin, D. Foray (Dir.). EPFL, Lausanne, 2017.

Three essays on corporate disclosure. **E. Petrov**, S. Malamud (Dir.). EPFL, Lausanne. 2017.

The economics of sharing markets. M. Razeghian Jahromi, T.A. Weber (Dir.). EPFL, Lausanne. 2017.

Three essays on collective forms of organizing for production and innovation. J. Rodrigues Pereira, C.L. Tucci (Dir.). EPFL, Lausanne. 2017.

Einsatz von Nichtmarktstrategien durch oeffentliche Unternehmen gegenueber dem Staat Untersuchung am Beispiel der Schweizerischen Post AG. C. J. I. Rentsch, M. Finger (Dir.). EPFL, Lausanne. 2017.

Essays in bank financing. Y. Sigrist, E. Morellec and R. Fahlenbrach (Dirs.). EPFL, Lausanne. 2017.

Diving into the dynamics of product evolution: Analyzing technological discontinuities during the era of incremental change and cognitive convergence on a dominant design. O. Waeber, C.L. Tucci (Dir.). EPFL, Lausanne. 2017.

Sustainable food supply: Combining performance measures and operational risk. S. L. Voldrich, P. Wieser (Dir.). EPFL, Lausanne. 2017.









