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 POLITECNICO DI MILANO



**Research group
Entrepreneurship, Finance & Innovation (EFI)**

Politecnico di Milano, School of Management



Agenda

- Who we are
- What we do
- Our research streams



Who we are



The EFI research group: People

Group coordinator

- Prof. **Massimo G. Colombo** (massimo.colombo@polimi.it)

•The other professors in the group

- **Annalisa Croce** (annalisa.franzoni@polimi.it)
- **Chiara Franzoni** (chiara.franzoni@polimi.it)
- **Elena Fumagalli** (elena.fumagalli@polimi.it)
- **Giancarlo Giudici** (giancarlo.giudici@polimi.it)
- **Massimiliano Guerini** (massimiliano.guerini@polimi.it)
- **Evila Piva** (evila.piva@polimi.it)
- **Cristina Rossi-Lamastra** (cristina1.rossi@polimi.it)

- A variable number of **post-docs** and **Ph.D. students**

•Several external collaborators

- E.g. **Ex-PhD students** working in **foreign institutions**



Our network of scientific collaborations: Some examples



The more you know,
the more you dare®



The University of
Nottingham

UNITED KINGDOM • CHINA • MALAYSIA



Business School
University of Navarra



COPENHAGEN
BUSINESS SCHOOL
HANDELSHØJSKOLEN



Imperial College
London



Schulich
School of Business
York University





What we do



Our approach:

Scientific research driven by rigor and relevance

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EFI group's goal: we aim to investigate **leading-edge themes on entrepreneurship, finance, and innovation** pursuing both **rigor and relevance**

- Sounded **conceptual models**
- Strong **quantitative approach** based on
 - **Large databases**
 - E.g., population **representativeness**, source **triangulation**, correction for **biases**
 - Advanced **statistics** and **econometric techniques**
- Attention to **practical implications**
 - Helping **managers** to make decisions
 - Supporting **policy makers'** decisions



Articles published in top scientific journals

- Science, Strategic Management Journal, Management Science, Research Policy, Entrepreneurship Theory and Practice, Journal of Business Venturing, ...

Articles published in practitioner-oriented journals

- California Management Review, Long Range Planning

Special issues

- Venture Capital, Journal of Product Innovation Management, Industry & Innovation, European Management Review, Journal of Technology Transfer, Small Business Economics, ...

Books

Some of our **scientific publications** received **awards** by scientific and practitioners' communities (e.g., Accenture)



We **design** and **teach courses** on our research topics at the different levels

•Bachelor and Master-of- Science

- E.g., High-tech Entrepreneurship, Entrepreneurship Economics and Policy

•Ph.D. (for doctoral students)

- E.g., Entrepreneurship and Entrepreneurial Finance, Economics and innovation of high tech entrepreneurship (EIASM Course)

•Executive Education – MBA and EMBA

- **AMIE** – Advanced Master in Innovation & Entrepreneurship (in collaboration with Solvey Business School)
- <http://www.mip.polimi.it/en/academics/people-and-careers/masters/amie-advanced-master-in-innovation-1/>
- E.g., Entrepreneurship and Entrepreneurial Finance bootcamp



How the EFI group finances its research activities: EU-funded projects – Some examples

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- **Cre8tv.eu FP7 research project: Unveiling creativity for innovation in Europe**
 - **Partners:** University of Manchester, Bocconi, University of Brighton, CBS, Corvinus University of Budapest, Eindhoven University of Technology, National Technical University of Athens, TUM, University of Gothenburg, ZEW
- **RISIS FP7 research project: Research infrastructure for research and innovation policy studies**
 - **Partners:** Université de Marne la Valle, Stichting VU, University of Manchester, CNR, Norsk Institutt for Studier av Innovasjon, AIT, Universiteit Leiden, IFQ, USI, Technion, CSIC, University of Sussex
- **VICO FP7 research project (EU success story): Financing Entrepreneurial Ventures in Europe: Impact on innovation, employment growth and competitiveness**
 - **Partners:** ParisTech-Mines, Research Institute of the Finnish Economy, LIUC, ZEW, UCM, Vlerick Leuven Management School, University College London, University of Gent
- **PICO FP6 research project: Academic entrepreneurship: From knowledge creation to knowledge diffusion**
 - **Partners:** ParisTech-Mines, Dynamia, University of Nottingham, University of Gent



- **Assolombarda: Determinants of start-up's creation and growth in Lombardia and European regions**
- **Provincia di Lucca: Development of indicators for the assessment of regional innovation**
- **Invitalia: Smart Specialization in the EU** (Massimiliano Guerini was member of working group)
- **UniCredit: Ricerche sull'Imprenditorialità nelle Tecnologie Avanzate**
- **The mini-bond and crowd-investing observatories**
 - Partners include important firms and institutions



Our research streams: What drives start-ups' creation and growth



1. Start-up creation - Determinants and key features

- **What are the drivers of start-ups' creation?**
 - Local ecosystems for entrepreneurship: infrastructures (Piva, Grilli & Rossi-Lamastra, 2011); university knowledge (Bonaccorsi, Colombo, Guerini, & Rossi-Lamastra, 2013; 2014; Ghio, Guerini & Rossi-Lamastra, 2016)
 - Student entrepreneurship (Colombo, Piva & Rossi-Lamastra 2016)
- **Do start-ups differ in their genetic characteristics and what does this imply?**
 - Academic start-ups (Colombo & Piva, 2008; 2012)
 - Family firms (Colombo et al., 2014)
 - Open source software firms (Colombo, Piva & Rossi-Lamastra, 2013; 2014)
 - Founders' human capital (Colombo & Grilli, 2005; Colombo, Croce & Murtinu, 2013)



EFI research streams: 2. Financing start-ups for growth

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- **What is the impact of VC on start-ups?**
 - Impact on growth (Colombo & Grilli, 2010; Bertoni, Colombo & Grilli, 2011), innovation (Bertoni, Croce & D'Adda, 2010), firms' financial constraints (Bertoni, Colombo & Croce, 2010), total factor productivity (Croce, Martì & Murtinu, 2013)
- **How can start-ups form valuable ties with Corporate VC investors?**
 - Role of IP rights and social defenses (Colombo & Shafi, 2016)
- **Do governmental programs effectively support start-ups?**
 - Impact on financial constraints (Colombo, Croce & Guerini, 2012), growth (Grilli, Murtinu, 2012), total factor productivity (Colombo, Grilli, & Murtinu, 2011), employment (Colombo, Piva, & Rossi-Lamastra, 2013), additional fundraising (Guerini & Quas, 2015)
- **What is the role of new alternative sources of finance?**
 - **Informal risk capital** (Colombo, Croce, & Guerini, 2014) and **crowdfunding** (Colombo, Franzoni & Rossi-Lamastra 2015)



3. OI and growth: start-ups & external knowledge sourcing

What are the **antecedents** and **consequences** of the diverse forms of Open Innovation (OI) in which start-ups involve?

•Inter-firm alliances

- Alliance formation (Colombo et al., 2006) and governance (Colombo, 2003; Colombo et al., 2014)
- Impact of alliances on start-ups' performance (Colombo, Grilli, Piscitello, Piva & Murtinu, 2009)

•Technological M&A

- The innovation impact of technological M&A (Cassiman, Colombo & Garrone, 2005; Colombo & Cassiman, 2006)
- The challenges of the post-acquisition re-organization process (Aghasi, Colombo & Rossi-Lamastra, 2016)

•Other forms of start-ups' collaborations

- University- industry collaborations (Colombo , D'Adda & Piva, 2010; Colombo et al., 2012)
- Collaborations with communities (Piva, Rentocchini, & Rossi-Lamastra, 2012)



EFI research streams: 4. Organizing start-ups for growth

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Mainstream view : start-ups do not need to organize

We challenge this view: start-ups have organization problems and a better organization is conducive to superior performance (Colombo, Matassini, & Rossi-Lamastra, 2015)

- The **enlargement of the managerial ranks** (Colombo and Grilli, 2013)
- How do **entrepreneurs** manage **their time**? How does this affect their firms' growth? (*work in progress*)
- How do **tasks specialization** and the **allocation of decision authority** over tasks affect **start-ups' performance**? (*work in progress*)



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