



# XVIII

## Milan European Economy Workshop

### The socio-economic impact of investment in science

#### 25-26 June 2020

#### **Objective**

The Milan European Economy Workshops are devoted to in-depth discussions on highly relevant policy issues for the European Union (EU). The objective of the 2020 workshop is to advance the debate on the socio-economic impact of large-scale science projects.

In particular the workshop will focus on the new Research Infrastructure (RI) paradigm of science production: bottom up approach; international coalitions of funders, accessibility by multiple users; open science approach; outreach and involvement of citizens.

In Europe there are around three hundred major international RIs and perhaps one thousand significant ones including those mostly funded by national governments, often with some support from the EU. The workshop will foster the dialogue between scientists, economists, managers, and policy experts about new approaches of the production of knowledge. There will also be a discussion about what we are learning from the pandemic.

#### **Organizing Committee**

Luc Bernier, University of Ottawa  
Eugenio Coccia, Gran Sasso Science Institute  
Simonetta Di Ciaccio, Italian Space Agency  
Massimo Florio, University of Milan (Chair)  
Carlo Fiorio, University of Milan (Co-Chair)  
Anna Giunta, University Rome 3  
Raffaella Manzini, LIUC University  
Valentina Morretta, University of Milan  
Barbara Sak, CIRIEC International  
Alessandra Tassa, European Space Agency  
Silvia Vignetti, CSIL Centre for Industrial Studies (Co-Chair)

#### **Organisation**

Martina Gazzo  
[MEEW@unimi.it](mailto:MEEW@unimi.it)

With the support of Ciriec International and CSIL Centre for Industrial Studies



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## THURSDAY, 25 JUNE

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**09.15** Arrival of participants in the virtual room and technical checks

**09.20** **Welcome:** Carlo Fiorio, Chair, Department of Economics, Management and Quantitative Methods, University of Milan

**09.25** **Opening remarks:** “Science after the pandemic”, Massimo Florio, University of Milan

### **09.30** SESSION 1: THE EUROPEAN RESEARCH INFRASTRUCTURE LANDSCAPE

- Roberta Zobbi, European Commission - DG for Research and Innovation
- Yannis Ioannidis, ESFRI European Strategy Forum on Research Infrastructures
- Giorgio Rossi, EOSC European Open Science Cloud
- Gaston Garcia, LEAPS League for European Accelerator - Based Photon Sources
- Allen Weeks, ELI The Extreme Light Infrastructure
- **Discussion**

**11.20** *Virtual Coffee Break*

### **11.30** SESSION 2: OPEN SCIENCE & PUBLIC VALUE

- Corinne Martin, ELIXIR  
“Towards an assessment of the impact of ELIXIR, a distributed and virtual research infrastructure in the life sciences”
- James Gillies, CERN European Organization for Nuclear Research  
“The CERN strategy for cultural impact: the origins and today”
- Francesco Giffoni, CSIL Centre for Industrial Studies  
“The social value of fundamental science: a contingent valuation experiment about particle physics research at CERN”
- Rocco Palumbo, University Rome 2 and Maddalena Sorrentino, University of Milan  
“Cui prodest? Disentangling the returns on research institutions and citizens’ investment in science: an insight into socially-distributed big science project”
- **Discussion**

**13.00** *Virtual Lunch Break*

### **14.30** SESSION 3: PUBLIC INVESTMENT IN SCIENCE AND SOCIAL JUSTICE

- **Key Note Speakers:**
- Fabrizio Barca, Inequality and Diversity Forum  
“The social impact of Covid 19 pandemic in Italy: what can we learn and do”
- Philip Clarke, University of Oxford - Health Economics Research Centre  
“COVID 19 and the option value of research infrastructure funding”
- **Discussants:**  
Luc Bernier, University of Ottawa  
Eugenio Coccia, Gran Sasso Science Institute  
Michela Massimi, University of Edinburgh
- **Discussion**

**16.00**      *Virtual Coffee Break*

**16.10**    **SESSION 4: ACTORS OF CHANGE, NEW POLICY PERSPECTIVES**

- Jonathan Gruber, Massachusetts Institute of Technology, author:  
“[Jump starting America: How breakthrough science can revive economic growth and the American dream](#)”, (Public Affairs, 2019)
- **Discussion moderated by:** Barbara Sak, CIRIEC International
- Massimo Florio, University of Milan, author:  
“[Investing in Science: Social Cost-Benefit Analysis of Research Infrastructures](#)”, (The MIT Press, 2019)
- Luc Bernier, University of Ottawa, editor:  
“[The Routledge Handbook of State-Owned Enterprises](#)”, (Routledge, 2020)

**17.30**      *End of the session*

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## FRIDAY, 26 JUNE

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### 09.20 Arrival of participants in the virtual room and technical checks

### 09.30 SESSION 5: RESEARCH INFRASTRUCTURES AND INNOVATION

- **Chair:** Anna Giunta, University Rome 3
- Matteo Landoni, Cattolica University  
“The value of the unknown. Measuring the effectiveness of complex projects in astrophysics: the case of SKA”
- Davide Vurchio, University of Milan  
“Big Science spillover on the research: evidence from the Italian Space Agency’s procurement activity”
- Martina Dal Molin, University Bicocca- National Institute for Nuclear Physics  
“The learning mechanisms through public procurement for innovation: the case of government-funded basic research organizations”
- Paolo Castelnovo, University of Milan and Stefano Clò, University of Florence  
“The economic impact of technological procurement in the upstream space industry: Evidence from the Italian Space Agency”
- **Discussants:**  
Johannes Gutleber, CERN European Organization for Nuclear Research  
Andy Williams, European Southern Observatory

### 11.00 *Virtual Coffee Break*

### 11.20 SESSION 6: SCIENCE & TECHNOLOGY POLICY ROUND TABLE

- Andrew Harrison, Diamond Light Source
- Thomas Hoerber, ESSCA School of Management
- Andrea Mairate, European Commission - DG for Economic and Financial Affairs
- Jennifer Moloney, UK Research and Innovation
- Michael Rast, European Space Agency
- Roberta Zobbi, European Commission - DG for Research and Innovation
- **Discussion**

### 13.00 *Virtual Lunch Break*

### 14.30 SESSION 7: THE SOCIO-ECONOMIC IMPACT OF EARTH OBSERVATION

- **Key Note Speaker:** Yusuke Kuwayama, Consortium for the Valuation of Applications  
Benefits Linked with Earth Science  
“Quantifying the societal benefits of Earth observations: How can economists contribute?”
- **Discussants:**  
Claire Jolly, OECD Space Forum  
Alessandra Tassa, European Space Agency  
Geoff Sawyer, European Association of Remote Sensing Companies

### 15.30 *Virtual CoffeeBreak*

#### **15.40 SESSION 8: CASE STUDIES ON THE IMPACT OF EARTH OBSERVATION**

- Giovanni Sylos Labini, Planetek  
“The future of Earth Observation value chain”
- Deodato Tapete, Italian Space Agency  
“Success stories of applied research and use-cases relying on radar and optical Earth Observation that generated impacts on society and culture”
- Luisa Mimmi, Ministry of Economy & Finance (formerly World Bank)  
“Predicting Deprivations in Housing and Basic Services from Space: A Pilot Study in Slums of Dhaka, Bangladesh”
- Valentina Morretta, University of Milan  
“The socio-economic value of scientific publications: the case of CosmoSkymed in a cost-benefit analysis prespective”
- **Discussion**

**17.20**     *End of the session*

**17.20 Concluding Remarks:** Massimo Florio, University of Milan

**17.30**     *End of the workshop*

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## List of participants

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- Fabrizio Barca, Inequality and Diversity Forum
- Luc Bernier, University of Ottawa
- Mirco Boschetti, IREA- The National Research Council (CNR)
- Lia Caponetti, University of Liège
- Paolo Castelnovo, University of Milan
- Gelsomina Catalano, CSIL Centre for Industrial Studies
- Panagiotis Charitos, CERN European Organization for Nuclear Research
- Philip Clarke, University of Oxford - Health Economics Research Centre
- Stefano Clò, University of Florence
- Eugenio Coccia, Gran Sasso Science Institute
- Carmela Cornacchia, The National Research Council (CNR)
- Martina Dal Molin, University Bicocca-National Institute for Nuclear Physics
- Petra Dell'Arme, University of Milan
- Pier Paolo Deminici, National Institute for Nuclear Physics
- Simonetta Di Ciaccio, Italian Space Agency
- Maddalena Donzelli, University of Milan
- Carlo Fiorio, University of Milan
- Gaston Garcia, League of European Accelerator-based Photon Sources
- Francesco Giffoni, CSIL Centre for Industrial Studies
- James Gillies, CERN European Organization for Nuclear Research
- Anna Giunta, University Rome Tre
- Jonathan Gruber, Massachusetts Institute of Technology
- Johannes Gutleber, CERN European Organization for Nuclear Research
- Andrew Harrison, Diamond Light Source
- Thomas Hoerber, ESSCA School of Management
- Yannis Ioannidis, ESFRI European Strategy Forum on Research Infrastructures
- Claire Jolly, OECD Space Forum
- Henning Kroll, Fraunhofer Institute for Systems and Innovation Research ISI
- Yusuke Kuwayama, Valuables Consortium (Resources for Future and NASA)-Washington D.C.
- Matteo Landoni, Cattolica University
- Fiona Larner, UK Research and Innovation
- Andrea Mairate, European Commission Directorate General for Economic and Financial Affairs
- Raffaella Manzini, LIUC Business School
- Corinne Martin, ELIXIR
- Michela Massimi, University of Edinburgh
- Luisa Mimmi, Ministry of Economy & Finance (formerly World Bank)
- Jennifer Moloney, UK Research and Innovation
- Valentina Morretta, University of Milan
- Rocco Palumbo, University Rome2
- Gelsomina Pappalardo, The National Research Council (CNR)
- Michael Rast, European Space Agency
- Giorgio Rossi, European Open Science Cloud
- Barbara Sak, CIRIEC International
- Geoff Sawyer, European Association of Remote Sensing Companies
- Emanuela Sirtori, CSIL Centre for Industrial Studies
- Maddalena Sorrentino, University of Milan
- Giovanni Sylos Labini, Planetek
- Deodato Tapete, Italian Space Agency
- Alessandra Tassa, European Space Agency
- Silvia Vignetti, CSIL Centre for Industrial Studies
- Davide Vurchio, University of Milan
- Allen Weeks, ELI The Extreme Light Infrastructure
- Andy Williams, European Southern Observatory
- Roberta Zobbi, European Commission Directorate General for Research and Innovation



## **CALL FOR PAPERS FOR A SPECIAL ISSUE**

### **“The socio-economic impact of investment in science”**

**Edited by Massimo Florio, University of Milan, Italy**

The traditional Big Science model has a top-down approach; it is typically linked to military and national ambitions and characterized by secrecy and restricted access to methods and data. In contrast, the new Research Infrastructure (RI) paradigm of science production, exemplified by the “Geneva model” of CERN, or the Human Genome Project, has a bottom up approach; it involves an international coalition of funders, it is accessible by multiple users and adopts an open science approach. In Europe there are around three hundred major RIs supported by international coalitions and perhaps one thousand significant ones mostly funded by national governments, often with some support from the EU. Several hundred research infrastructures are operated or designed globally, including in developing economies, such as the Square Kilometer Array (SKA) in South Africa, or the Circular Electron positron Collider (CEPC) in China.

What is the social value of public investment in large scale science? How can we understand the new trends in the organization of knowledge production as a public good? What are the implications for economic growth and social justice?

Some of these issues are discussed in recent books such as Florio (2019), Gruber and Johnson (2019), Mazzucato, 2018.

This is an open call for papers for a special issue of the Annals of Public and Cooperative Economics on these questions.

The journal aims at publishing high-quality papers about how large-scale scientific projects (including particularly research infrastructures, technology hubs, research clusters, and other knowledge-intensive organizations) sustain growth, welfare, and social justice. We are interested in contributions based on different approaches, case studies and policy implications.

A non-exhaustive list of topics includes the following ones:

- Case studies of broad (global, national, local) impact of large-scale scientific projects
- Understanding the impact of scientific projects on growth, welfare and social justice
- Social cost-benefit analysis and other quantitative methods of impact assessment
- The cultural impact of science projects, including through social and traditional media
- Citizens attitudes and engagement on science
- The socio-economic impact of space science and technology, such as Earth Observation
- Public procurement for innovation in such fields as physics, astronomy, space science, and other capital-intensive domains
- Science and technology missions for public enterprises, development banks and other economic players
- Technological learning from research infrastructures, spin-offs, venture capital
- Intellectual property and government funded large scientific projects
- Big data and Big science: challenges and opportunities
- Science policy issues related to large-scale projects, mission-oriented policies and organizations

All papers should be submitted through the Annals of Public and Cooperative Economy online platform ([mc.manuscriptcentral.com/apce](http://mc.manuscriptcentral.com/apce)). Some papers may be also presented at the XVIII Milan European Economy Workshop (June 25th – 26th, 2020) organised by the Dept. of Economics, Management and Quantitative Methods, University of Milan, with the support of the Italian Space Agency ([meew@unimi.it](mailto:meew@unimi.it) for information). All papers, either presented at the workshop or directly submitted to the journal will be subject to anonymous review in line with APCE guidelines for submission. The deadline for all submissions for the special issue is October 30, 2020.

#### **References:**

- Florio, M. (2019). Investing in Science: Social Cost-Benefit Analysis of Research Infrastructures. MIT Press.
- Gruber, J., & Johnson, S. (2019). Jump-starting America: How breakthrough science can revive economic growth and the American dream. Public Affairs, New York.
- Mazzucato, M. (2018). The Entrepreneurial State: Debunking Public vs. Private sector myths. Penguin (new edition)..
- Stefano Clò and Massimo Florio, “ Science, innovation, and public services: editorial introduction”, Journal of Economic Policy Reform, Vol. 23, 1, March 2020.

**CALL FOR PAPERS OPENS: FEBRUARY 15, 2020, CALL FOR PAPERS CLOSES: OCTOBER 30, 2020, SUBMISSIONS WITH INDICATION “SPECIAL ISSUE” TO: [HTTP://MC.MANUSCRIPTCENTRAL.COM/APCE](http://mc.manuscriptcentral.com/apce)**