Stimulating knowledge transfer: Challenges and policy responses

Introduction to today’s workshop

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New transformative research-based products for society and industry
Science and industry interact in diverse ways

**Direct channels**
- Collaborative research
- Contract research
- Academic consultancy
- IP transactions
- University spin-offs
- Labour mobility

**Indirect channels**
- Publication of research results in scientific journals
- Conferencing & networking
- Facility sharing
- Continuing education
Social scientists are critical for service sectors, less so for manufacturing.

Source: EU-LFS, 2013.

Source: Paunov et al. (2017)
Several sectors recruit graduates from a wide range of disciplines

Source: EU-LFS, 2013.

Source: Paunov et al. (2017)
Research and industry context also make a difference
What higher education landscape best supports knowledge transfer?

How to best make use of international and sectoral mobility of researchers?

How to optimise knowledge transfer to non-high-tech industries and services?

What policy mix to support knowledge transfer?

- Innovation Policy Review of Portugal
- OECD TIP Working Party project on knowledge transfer
Objectives of the OECD TIP project

- Assessing the **impacts of research institutions on innovation** performance
- Understanding the **policy mix for knowledge transfer**, including the policy mix for **spin-offs**
Project scope

Policy instruments and mixes

Focus: Spin-off creation

Barriers to knowledge diffusion

Industry

Formal & informal channels

Intermediaries

Research institutions

Nature of the contribution

- Novelty
- Impact

Innovation performance

Productivity & addressing social challenges

HEI/PRI characteristics

- Size
- Public & private status
- Quality of research & teaching
- International linkages

Industry structure

- Size of firms
- Sectoral specialisation and importance of science-based fields
- Market conditions
- Position on global markets

Industry structure

Focus: Spin-off creation

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HEI/PRI characteristics

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- Quality of research & teaching
- International linkages
Project timeline

January 2017: Scoping work
June 2017: TIP workshop
December 2017: TIP Meeting
December 2018: Final project report

Today:
Mapping of policies & impact analyses
Country case studies

Today’s workshop

Education
University
Research
Innovation
### Agenda of workshop

**Day 1**

- **15h00 – 17h00**: Discussions of the TIP Steering Group

**Day 2**

- **9h30 - 10h30**: Introduction

- **10h30 - 12h30**: Panel 1
  - Challenges to the stimulation of technology transfer in Portugal

- **13h30 – 15h00**: Panel 2
  - Knowledge transfer in a diversified higher education landscape

- **15h30 – 17h00**: Panel 3
  - International and inter-sectoral human mobility

- **17h00 – 17h30**: Collaborations between TIP and Country Reviews

**Day 3**

- **9h30 – 11h00**: Panel 4
  - Knowledge transfer to ‘non high-tech’ industry and services

- **11h15 – 12h30**: Panel 5
  - What is the right policy mix for knowledge transfer?

- **12h30 – 12h45**: Wrap up of the workshop
Panel 1: Challenges to the stimulation of technology transfer in Portugal

Questions to address

• What are main challenges to stimulating investment in science and higher education in Portugal?
• What are challenges and opportunities for knowledge transfer in Portugal?

Participants

- Chair: Helena Pereira, Foundation for Science and Technology, Portugal
- Presentation of the ongoing Innovation Policy Review of Portugal
  - Dominique Guellec, OECD
  - Philippe Larrue, OECD
- Speakers:
  - José Luis Encarnação, Assessment Commission of the Collaborative Laboratories, Portugal
  - José Manuel Mendonça, INESC-TEC Associate Laboratory, Portugal
  - Guy Villax, Hovione, Portugal
  - Elvira Fortunato, I3N/CENIMAT, Portugal
  - Isabel Caetano, National Innovation Agency, Portugal
Panel 2: Science, innovation and knowledge transfer in a diversified higher education landscape

• **Diversified institutional landscapes** differentiate public research systems

• **Adequate division of tasks?**

  ➢ **Research universities & ‘polytechnics’** in Portugal
  ➢ **Excellence institutions** & concentration
  ➢ **Intermediary institutions** as connectors of research and industry
Panel 2: Science, innovation and knowledge transfer in a diversified higher education landscape

Questions to address

• How to best organise science-industry relations in a diverse institutional set-up where research universities co-exist with universities of applied science (i.e. ‘polytechnics’)?

• What division of labour between institutions works best?

• What are opportunities for synergies?

• What best practice examples exist in Portugal and abroad?

Participants

- Chair: Dominique Guellec, OECD
- Speakers:
  - Haakon Kobbenes, Ministry of Education and Research, Norway
  - Etienne Choupay, Ministry of the Economy, Development and Tourism, Chile
  - Eduardo Beira, Program for the Modernisation and Valorisation of the Polytechnic Higher Education, Portugal
  - Sara Paulina Monteiro, InPaCTus, Raiz Research Centre, The Navigator Company, Portugal
  - Haio Harms, Christian Doppler Forschungsgesellschaft, Austria
  - Jari Hyvärinen, Finish Funding Agency for Innovation, Finland
- Commentator: Isabel Ferreira, Bragança Polytechnic Institute, Portugal
Panel 3: International and intersectoral mobility of researchers

- Top research is \textit{global} and top talent is \textit{mobile} everywhere benefiting knowledge creation globally
- \textbf{Global vs. national benefits?}
- \textbf{Experience of outflows with the global crisis} esp. where research budgets were cut
- \textbf{Taking advantage of those abroad} is possible but not easy
Panel 3: International and intersectoral mobility of researchers

Questions to address

• How to attract, retain and support young talent with limited public budgets and private sector recruitment?

• How can students and young researchers support science-based industries?

• Is creating more opportunities for spin-offs created by PhDs and researchers an option?

• What is the role of intermediary institutions for knowledge sharing between industry and science?

Participants

• Chair: Philippe Larrue, OECD

• Speakers:
  – Luísa Loura, Directorate-General for Statistics on Education and Science, Portugal
  – Sarah Parks, RAND Europe, United Kingdom
  – Pedro Teixeira, Centre for Research on Higher Education Policies, Portugal
  – Ana Correia, Directorate-General for Research and Innovation, European Commission
  – Dirk Meissner, National Research University - Higher School of Economics, Russian Federation
  – Rodrigo Maia, Altran, Portugal

• Commentator: Agni Spilioti, Ministry of Education, Research and Religious Affairs, Greece
Collaborations of between OECD TIP- and country reviews

Questions to address

• How to enhance contributions of TIP peer reviews to country reviews?

• How to enhance contributions of country reviews to the TIP project on “Assessing the impacts of knowledge transfer and policy”?

Participants

- Chair: Tiago Santos Pereira, Foundation for Science and Technology, Portugal
- Commentators:
  - Dominique Guellec, OECD
  - Philippe Larrue, OECD
  - Caroline Paunov, OECD
  - Haakon Kobbenes, Ministry of Education and Research, Norway
Panel 4: Knowledge transfer to ‘non high-tech’ industry and services and companies with low absorptive capacities

- **Knowledge transmission channels** differ across sectors, often less formal in services and non high-tech, often below the radar
- Non high-tech firms and service firms may have **lower absorptive capacity** of science-based innovations, beyond sectors often a challenge for SMEs
- From research output to innovation: **research-based spin-offs**
- Building ties for research inputs for **uptake abroad**?
Panel 4: Knowledge transfer to ‘non high-tech’ industry and services and companies with low absorptive capacities

Questions to address

• How to initiate virtuous circle between demand for innovation and the offer of innovative solutions in an environment where most industries and companies have a low absorptive capacity?

• How can public support trigger such a virtuous circle?

• How can policy support the creation of research spinoffs?

Participants

- Chair: José Guimón, Autonomous University of Madrid, Spain
- Speakers:
  - Agni Spilioti, Ministry of Education, Research and Religious Affairs, Greece
  - Vítor Corado Simões, Lisbon School of Economics and Business, Portugal
  - Sophie Viscido, European Association of Research and Technology Organisations, Belgium
  - João Paulo Dias, Pedro Nunes Institute, Portugal
  - Joana Mendonça, Instituto Superior Técnico, University of Lisbon, Portugal
- Commentator: Tiago Rebelo, Centre of Engineering and Product Development, Portugal
Panel 5: Concluding panel: What is the right policy mix for Knowledge Transfer?

Questions to address

• What is the **optimal policy mix for knowledge transfer**?

• How can the different policy instruments available to policy makers to support knowledge transfer?

• What factors are critical to understand **synergies and possible conflicting effects** across these instruments?

• What **social and economic conditions of countries and regions** influence the possible impacts of these policies?

• What role can **knowledge intermediaries** play in supporting knowledge transfer?

Participants

- Chair: **Caroline Paunov**, OECD
- Speakers:
  - **Margarida Fontes**, National Laboratory for Energy and Geology, Portugal
  - **Brian MacAulay**, Digital Catapult, United Kingdom
  - **Ricardo Mendes**, Tekever, Portugal
  - **Areti Gkypali**, Warwick Business School, United Kingdom
  - **José Carlos Caldeira**, National Innovation Agency, Portugal
Panel speakers have **10 minutes**

Commentators have **4 minutes**

Signs will go up at **3 minutes, 1 minute and when it is over**

To all: questions and discussion points are what we need for the workshop
Further information and contact

The summary of the workshop discussions and all presentations will be available at:
https://www.innovationpolicyplatform.org/Lisbonworkshop2017

OECD impact assessment of knowledge transfer and policies project:
https://www.innovationpolicyplatform.org/impact

OECD Working Party on Innovation and Technology Policy (TIP) website:
https://www.innovationpolicyplatform.org/CSTP/TIP

THANK YOU!

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References

