



Innovation Growth Lab Global Conference 2017

by **nesta**

13-14 June 2017
Barcelona

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Tekes





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How to combine innovation policies to support private sector R&D

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CONTENT OF THE WORKSHOP

- Introduction to existing instruments to fund R&D
- Presentation of the 2 debate themes
 - Which set of incentives is found to be more effective
 - Which mechanism of control is the best fit for these instruments
- Group Discussions
- Presentation of the conclusion



INTRODUCTION

- Which instruments are used to fund R&D?
 1. R&D Tax Credits or Reliefs
 2. Grants and direct public funding
 3. Patent Box
 4. Other incentives
- What is the impact of these measures on R&D investment from the private sector?
- What has been the trend over the past 5 years?

1. R&D Tax Credits and Deductions

R&D Tax Credit

A percentage of the eligible expenses is deducted from the Corporate Tax Liability

Ex: France, 30% R&D Tax Credit

R&D Super-Deduction

An enhanced deduction of the eligible expenses aiming to reduce the taxable income

Ex: UK (SMEs) 230% enhanced deduction

- Define eligible expenditures and percentage of deduction
- Cash refundable for loss-making companies?
- Volume based or incremental based?
- Retroactivity and Carry-forward?
- Caped or uncapped incentive?
- Self-assessment or project's mandatory evaluation?

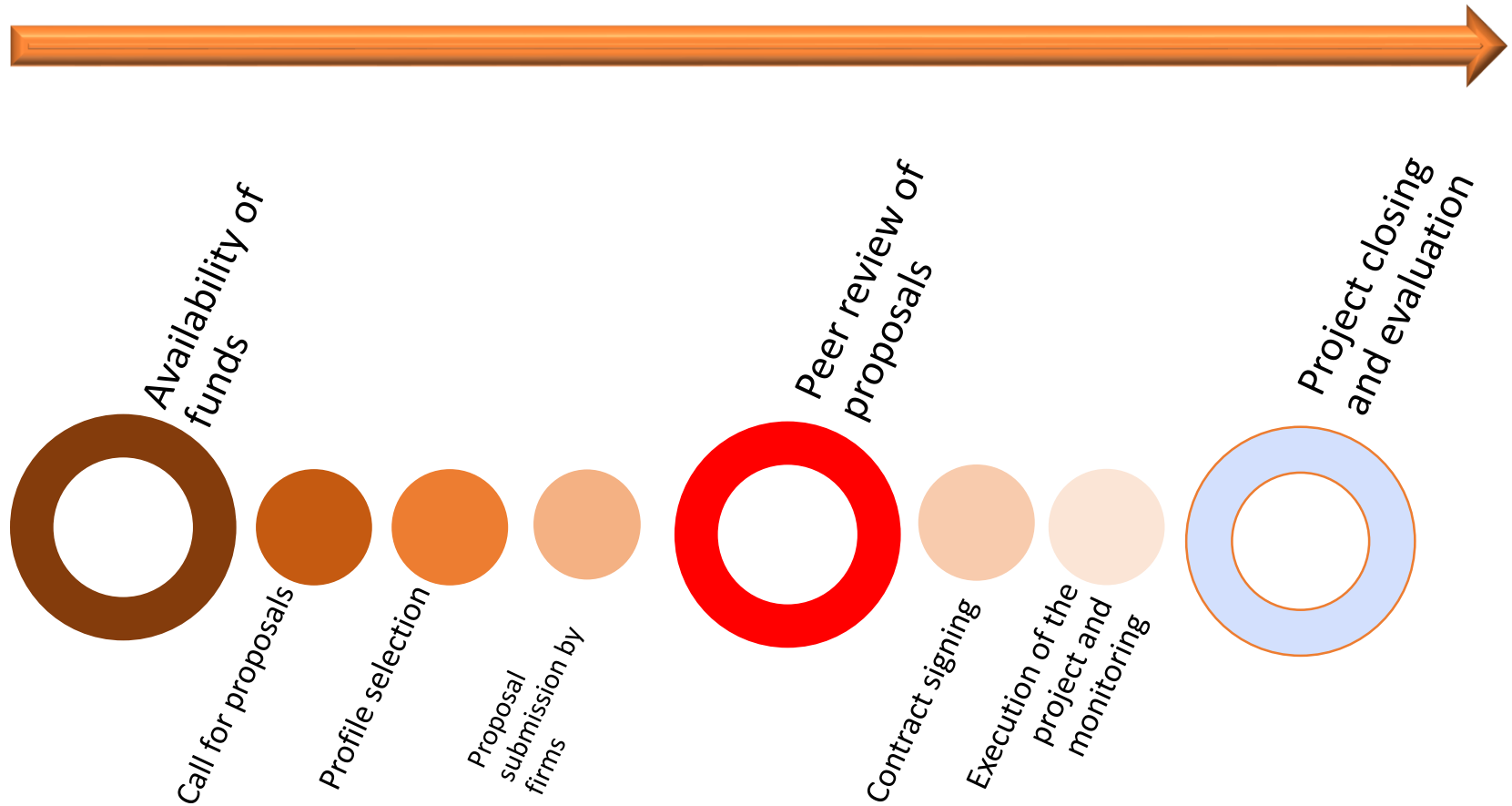
Most developed and developing economies offers now R&D tax credits and/or deductions

2. R&D Grants & Funding

- Innovation funds are an "entry level" policy instrument, relatively easy to put together and implement, and ideal to build upon, when it comes to upgrading to more sophisticated policies.
- Individual or collaborative, including partnerships between companies of different countries
- Defining the criteria of selection is the key to target the right companies according to the objectives of the funding program:
 - Size of the company
 - Sector of activity or technology
 - Technology Readiness Levels (TRL) targeted
 - There is always a requirement of matching funds coming from the candidate firms, although the amount of such funds may vary according to local conditions, technological risk or other factors, to be defined in advance, and not applied in an ad hoc basis to each selected project.



2. R&D Grants & Funding



3. Patent Box

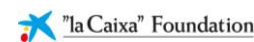
- A patent box is a special tax regime for intellectual property revenues. It is also known as intellectual property box regime, innovation box or IP box, depending on the country.
- Proposes a reduced rate of tax on revenue from IP licensing or the transfer of qualified IP
- In 2015, under the pressure from Germany, the NEXUS approach has been implemented through OECD's countries, which means the patent box relief will now be restricted to profits generated from IP initially developed in the country.

Countries proposing Patent Boxes: Belgium, China, France, Greece, Hungary, India, Ireland, Italy, Netherlands, Portugal, South Korea, Spain, Turkey, United Kingdom



4. Other R&D incentives

- Reduction of social contributions for researchers
 - To facilitate hiring high skilled professionals involved at 100% on R&D
 - In complement or instead of R&D Tax Credits?
- Reduced VAT on R&D purchased material
- Accelerated write off for fixed assets used for R&D purposes
- Special fiscal regimes for innovative Start-Ups
 - “Young Innovative Company” regime in France
 - “Start-Up Chile” program



Evidence on impacts

Sources:

Fiscal Policies for Innovation And Growth, IMF, April 2016

R&D Tax Incentives: Evidence on design, incidence and impacts, OECD, September 2016

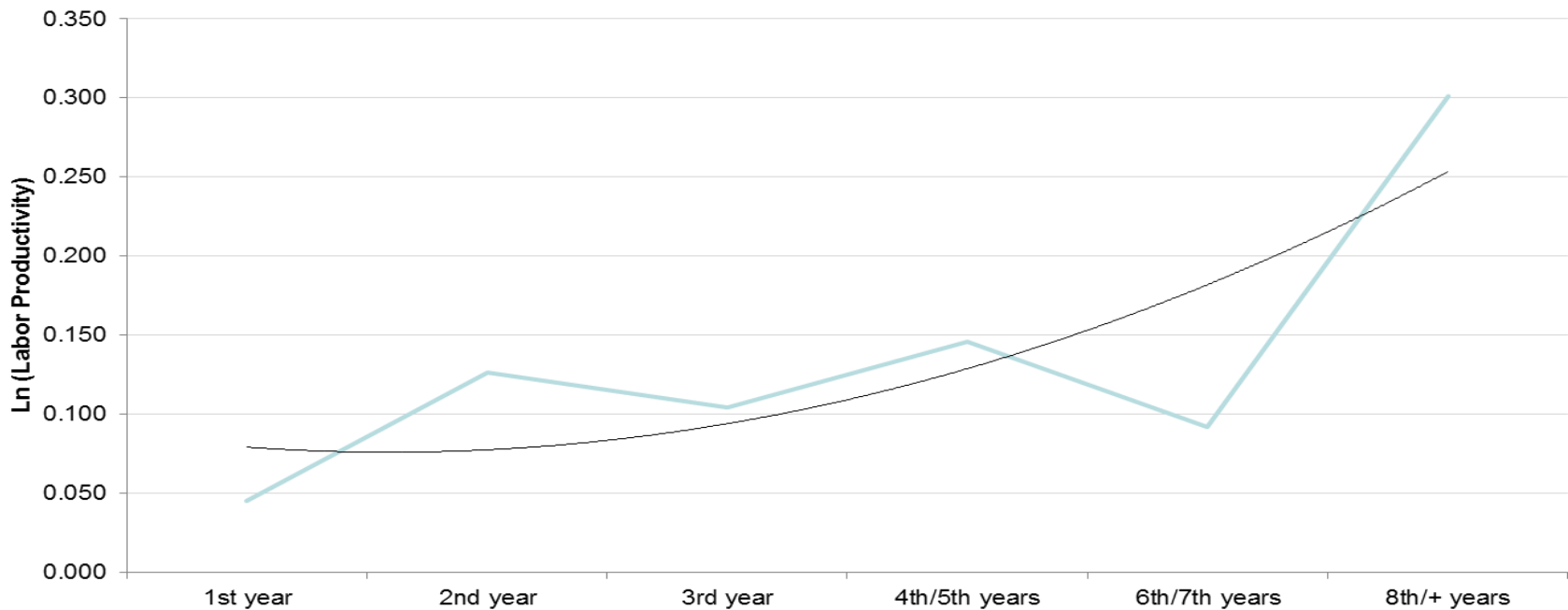
The Economic Rationale for Public R&I Funding and its Impact, European Commission, March 2017

- **New evidence finds that fiscal stabilization is especially important for industries that are highly reliant on external funding.**
- In advanced economies, private **R&D investment should be raised, on average, by 40 percent** to attain levels that are efficient from a national perspective. Achieving these R&D levels **could raise GDP by 5 percent in the long term**. The associated fiscal costs are estimated **to be about 0.4 percent of GDP per year**.
- New evidence suggests that **research subsidies and tax incentives targeted at R&D expenditures can effectively promote productivity growth**.
- However, some existing policies have high fiscal costs but do little to foster innovation. For example, the analysis shows that **patent boxes (which reduce taxes on income from intellectual property) are often not cost-effective in stimulating R&D**. In some cases, they are simply part of an aggressive tax competition strategy.

Evidence on impacts

Subsidies aimed at encouraging firms to innovate have lasting effects on productivity

The case of Colciencias program (Colciencias)

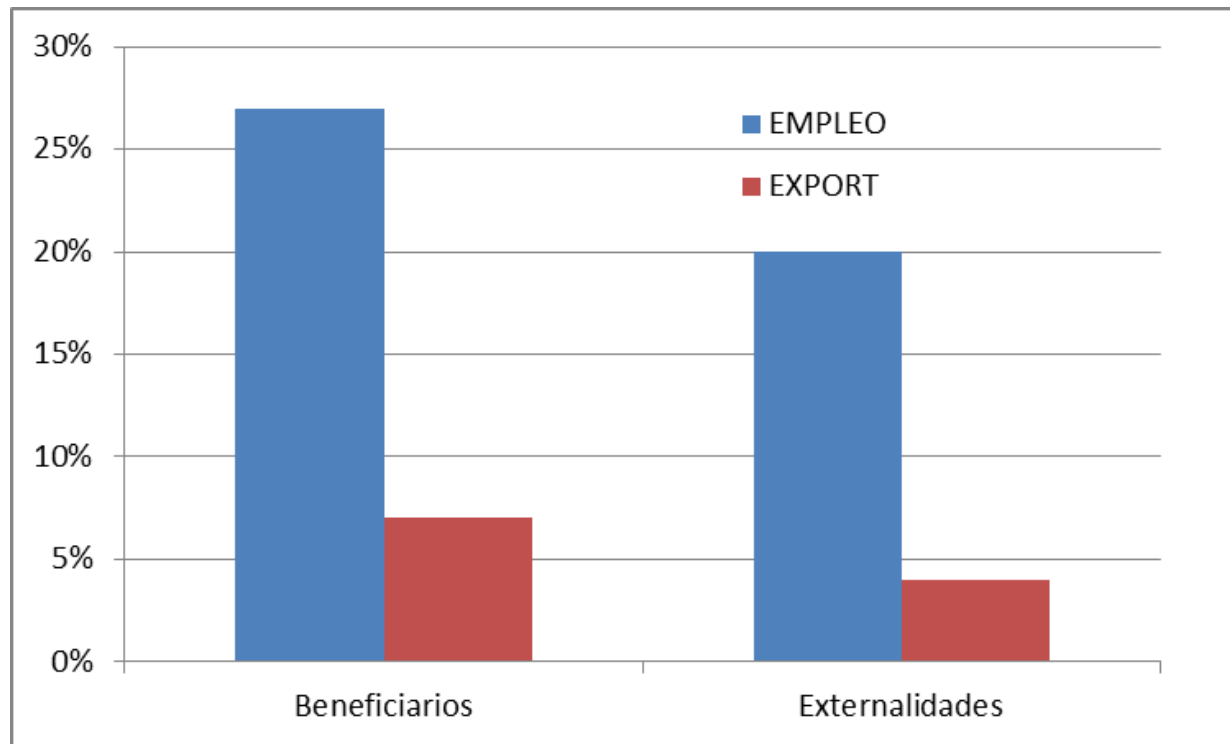


Crespi et al.

Evidence on impacts

Positive spillovers have been documented, as a key impact of innovation funds

The case of Argentina innovation fund (FONTAR)



Maffioli et al.

Evidence on impacts

- Using fiscal incentives with **the sole purpose of attracting potentially mobile R&D** by MNEs is likely to have only limited effects, and it **can lead to a dangerous “race to the bottom”** among countries.
- Governments should ensure that R&D tax incentive policies provide value for money, through **effective ex-post evaluation linked to the ex-ante assessment of reforms and new initiatives**. Ex-ante provision for an ex-post evaluation should be an integral part of every innovation policy.
- **Small or young firms react more strongly to R&D tax incentives than large firms**, and they are less likely to shift their profits abroad to avoid taxes. R&D tax incentives **should include carryforward provisions, cash refunds or reductions in social security and payroll taxes**, so that they fully benefit also small and young firms and projects involving basic research.

HOWEVER

- According to other studies, **Small and Young firms in Latin America react more strongly to grant funding than to tax incentives**.
- Policymakers should consider **balancing indirect support for business R&D (tax incentives) with the use of direct support** measures to foster innovation where the market is less likely to deliver it on its own. They should also assess how different innovation support instrument interacts with and complement each other. In some cases, direct instruments may be more appropriate. **The optimal mix will depend on very specific circumstances as well as policy preferences**.



Evidence on impacts

EU level example - summary of estimations of FP7's economic impact

- Based on macro-sectoral model, the economic returns of FP7 is expected to result in a cumulative increase in GDP of 500 billion until 2030, i.e. an extra 0.15% annual GDP growth;
- It is estimated that FP7 has generated around 11 euros of direct and indirect economic effects through innovations, new technologies and products, per euro invested;
- FP7 is expected to create over 130.000 research jobs directly over a period of 10 years, and additional 160.000 additional jobs indirectly over a period of 25 years;
- Based on the OpenAire database, scientific production involves over 200.000 publications from FP7 projects.
- More than 1.700 patent applications have been filed;
- 50.000 researchers, including 10.000 PhD students, have been funded thanks to FP7.



TRENDS – Last 3 Years

- Evolution of R&D Tax Incentives

- New:

- Italy, Mexico, Chile, Columbia, China, Greece, Latvia, Poland, Romania, Spain

- Increased:

- Ireland, United Kingdom, Netherlands, Spain, Russia, Turkey, Austria
USA made its R&D Credit permanent.

- Decreased:

- Australia, Canada, India (but increased Patent Box)

- In 2017:

- 33 countries have R&D tax incentives

- 14 countries have Patent Boxes

Presentation of the 2 debate themes

1. Which set of incentives is found to be more effective?
2. Which mechanism of control is the best fit for these instruments?

CONCLUSION OF THE DEBATES

