THE INNOVATION AND ECONOMIC IMPACTS OF BUSINESS R&D SUPPORT POLICIES (MICROBERD)

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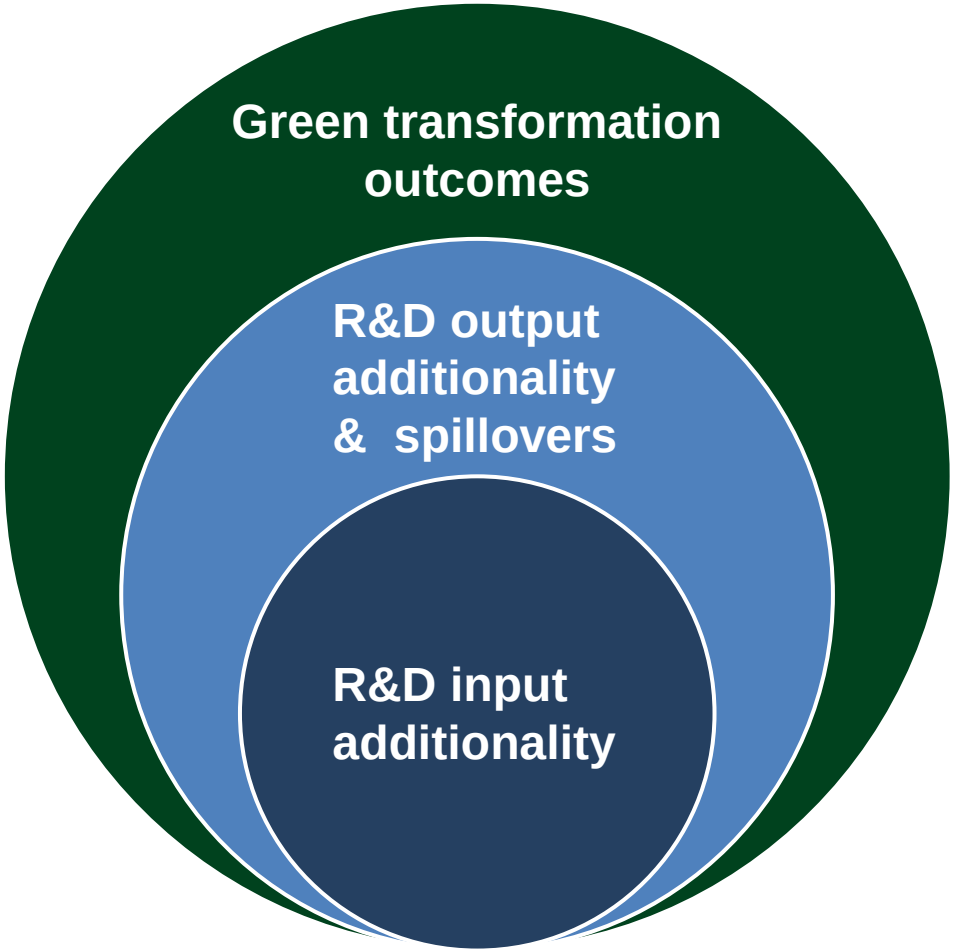
BETTER POLICIES FOR BETTER LIVES

What policy questions does microBeRD address?



microBeRD (2016-19)

microBeRD+ (2020-23)

microBeRD3 (2023-26)

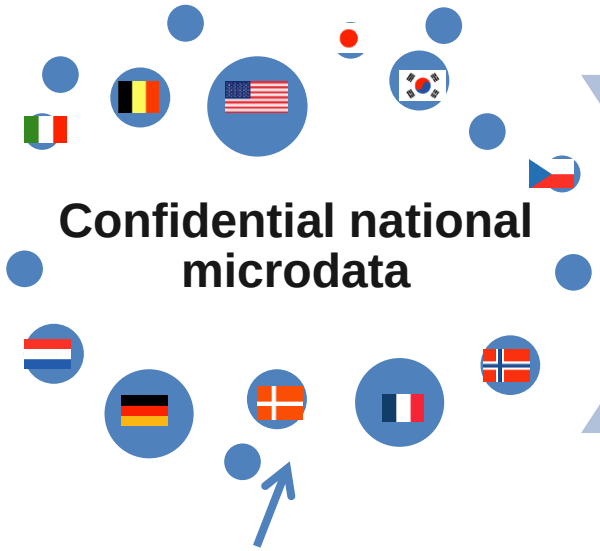
1. **R&D input additionality**: How effective are R&D tax incentives and direct funding in encouraging **additional business R&D investment**?
   - **Heterogeneity** of effects (e.g. type of firm, R vs D)

1. **R&D input additionality**
   - Role of R&D tax incentive **design features**
2. **R&D output additionality**: What is the impact of R&D tax incentives and direct funding on **innovation outcomes and economic performance** and how large are the **spillovers** from R&D?

3. **Pilot analysis** of green transformation outcomes

How does microBeRD address these policy questions?

A distributed and hybrid approach



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BETTER POLICIES FOR BETTER LIVES

Statistical code

RDTAX design

Cross-country analysis

(e.g. country, industry, size class level)

Within-country analysis

(distributed regressions)

DATA SOURCES

Core microdata
- BERD survey
- R&D tax relief

+

Extensions
- Innovation survey
- Patents
- Structural business statistics

COVERAGE

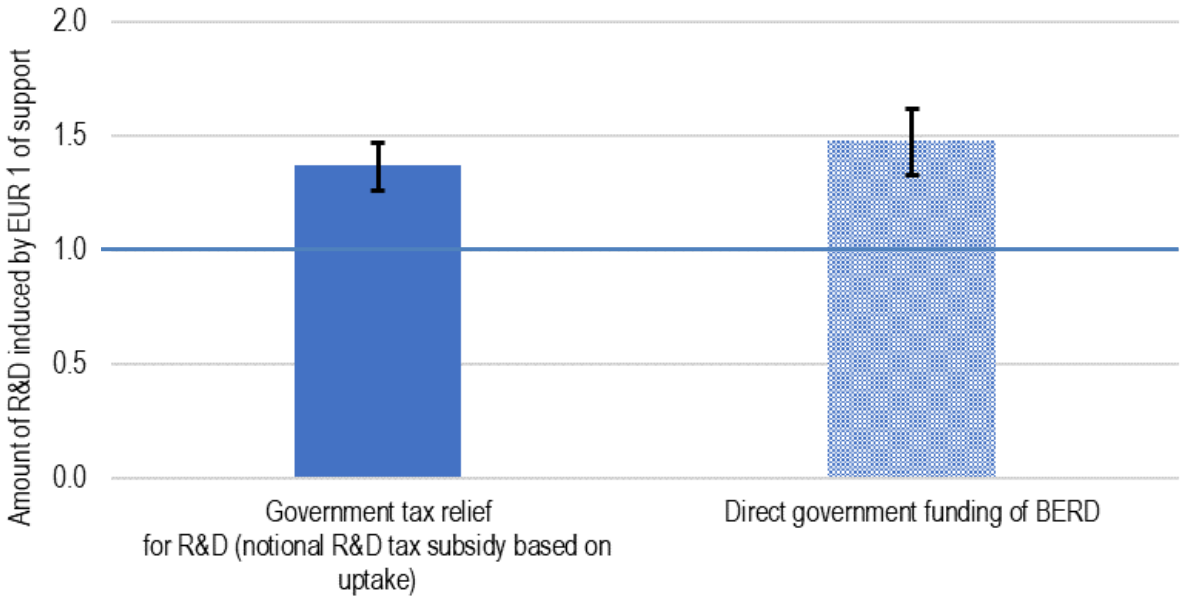
R&D input additionality
- *Cross country*: 21 countries, 2000-2019
- *Firm level*: 16 countries [new results: CAN, ITA, NLD, NZL, SVK]

R&D output additionality and spillovers
- *Cross-country*: 9 countries, 2001-19 (microBeRD x STAN)
- *Firm level*: 14 countries (AUS, BEL, CAN, CZE, FRA, GBR, ITA, JPN, NLD, NOR, NZL, PRT, SVK, SWE), spillovers – 5 countries

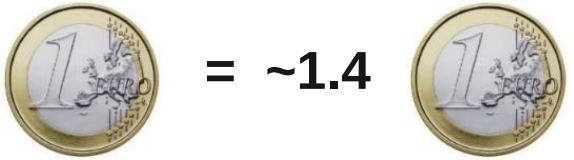
microBeRD – key findings at a glance

Average effect of R&D tax incentives and direct funding

Estimated effectiveness of government support in raising business R&D



Average effect across countries, industries, size classes, years:



Unit of tax / direct support

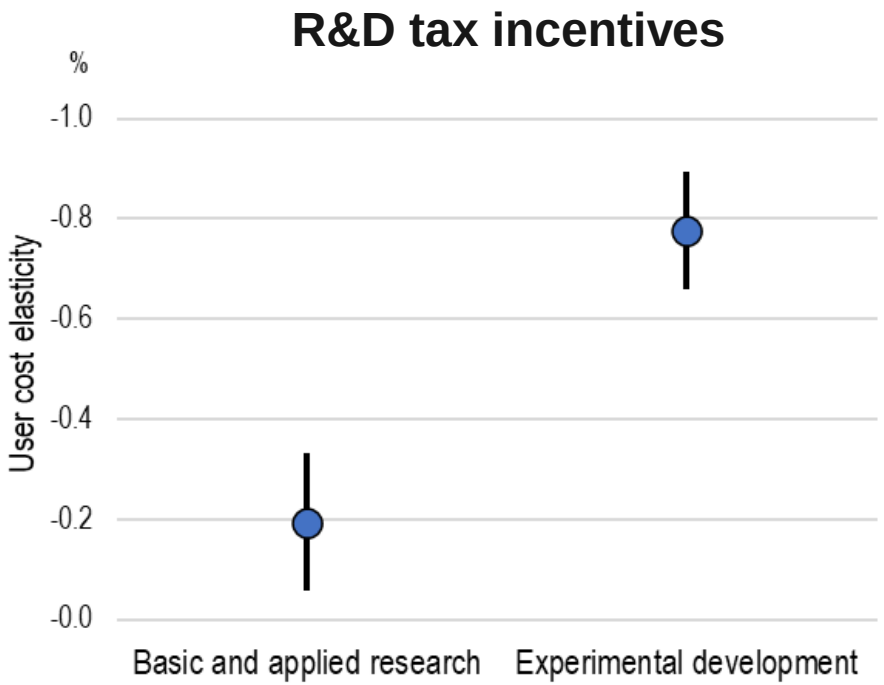
Additional R&D expenditure

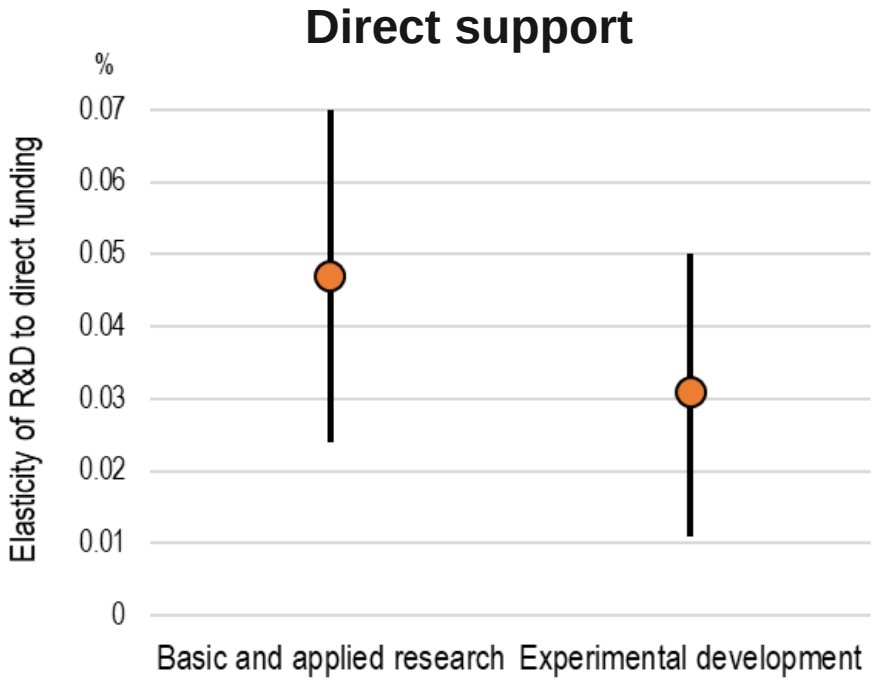
ROLE OF TAX INCENTIVES TAKE-UP

- Not all firms used R&D tax incentives ➔ could lead to underestimation of the effectiveness
- microBeRD accounts for this using R&D tax relief microdata

microBeRD – key findings at a glance

Research vs Development





- **Tax incentives** affect experimental development much more strongly than basic and applied research
- **Direct funding** related more strongly to basic and applied research than to experimental development

microBeRD – key findings at a glance

Effectiveness of R&D tax incentives by firm size

Effectiveness of R&D tax incentives by firm size

Unit of tax support

=

~ 1.6  for small firms

~ 1.4  for medium-sized firms

~ 0.4  for large firms

Units of additional R&D expenditure

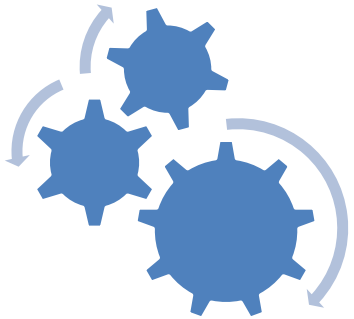
microBeRD – key findings at a glance

Policy design and responsiveness to R&D tax incentives (exploratory!)

- Business responsiveness to R&D tax incentives much stronger when incentives
  - Refundable in case of loss
  - Redeemable against payroll taxes (disconnected from profit situation of firms)

➔ **Design matters**

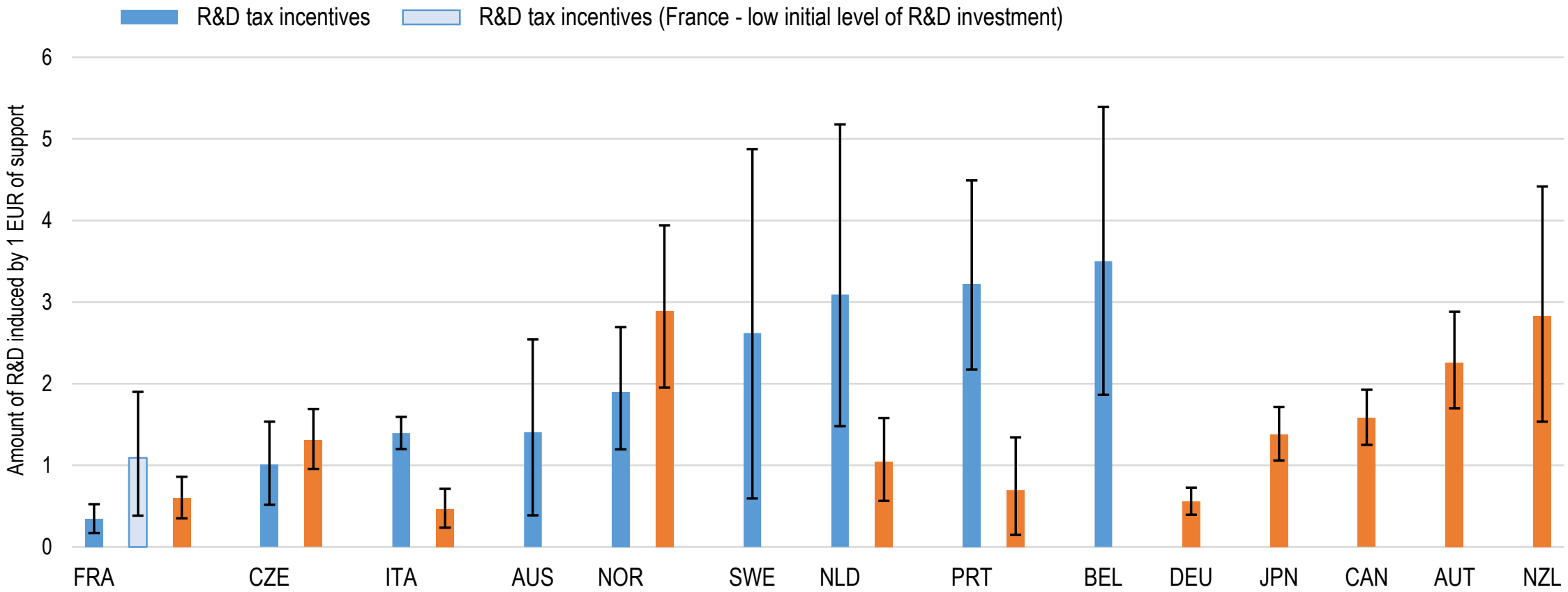
- Responsiveness not affected by other design features, e.g.:
  - Tax credit vs. allowance
  - Volume-based vs. incremental
  - Preferential treatment of SMEs
  - Ceilings on eligible R&D



microBeRD – key findings at a glance

Country-specific estimates of input additionality (recipients vs non recipients)

Effectiveness of R&D tax incentives and direct support in raising business R&D



microBeRD – key findings at a glance

Country-specific estimates of output additionality and economic effects

CROSS-COUNTRY ANALYSIS OF RETURNS TO BUSINESS R&D

- Evidence of **substantial economic returns** from business R&D (35%-122%)
- Evidence of **spillovers from R&D** conducted in **upstream** industries

FIRM-LEVEL ANALYSIS OF ECONOMIC AND INNOVATION EFFECTS OF PUBLIC SUPPORT

- Evidence of **positive effects of public support on economic performance** (e.g. sales, employment, productivity) in most countries
- Some evidence of a **positive effect of public support on subsequent patenting**
- No clear evidence for business innovation
- Evidence of **social returns far exceeding private returns** (due to spillovers)

Key resources and next steps

microBeRD publications

- OECD (2023), "The Impact of R&D tax incentives: Results from the OECD microBeRD+ project"
- OECD (2022), "Micro-data-based insights on trends in business R&D performance and funding: findings from the OECD microBeRD+ project".
- OECD (2020), "The effects of R&D tax incentives and their role in the innovation policy mix: Findings from the OECD microBeRD project, 2016-19"

MABIS2-microBeRD

Objectives:

- Extend R&D input and output additionality analysis
- Conduct pilot analysis of green transformation outcomes

Two rounds of distributed analysis (first to be launched this week - green focus)

➔ OECD-STI publication "Measuring contribution of STI to green transition" (Q1 2025)

➔ Two microBeRD project publications to be released in Q2 2026

THANK YOU!

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