



KATHOLIEKE UNIVERSITEIT
LEUVEN



Evaluation of R&D Subsidies

Otto Toivanen
KU Leuven

This presentation

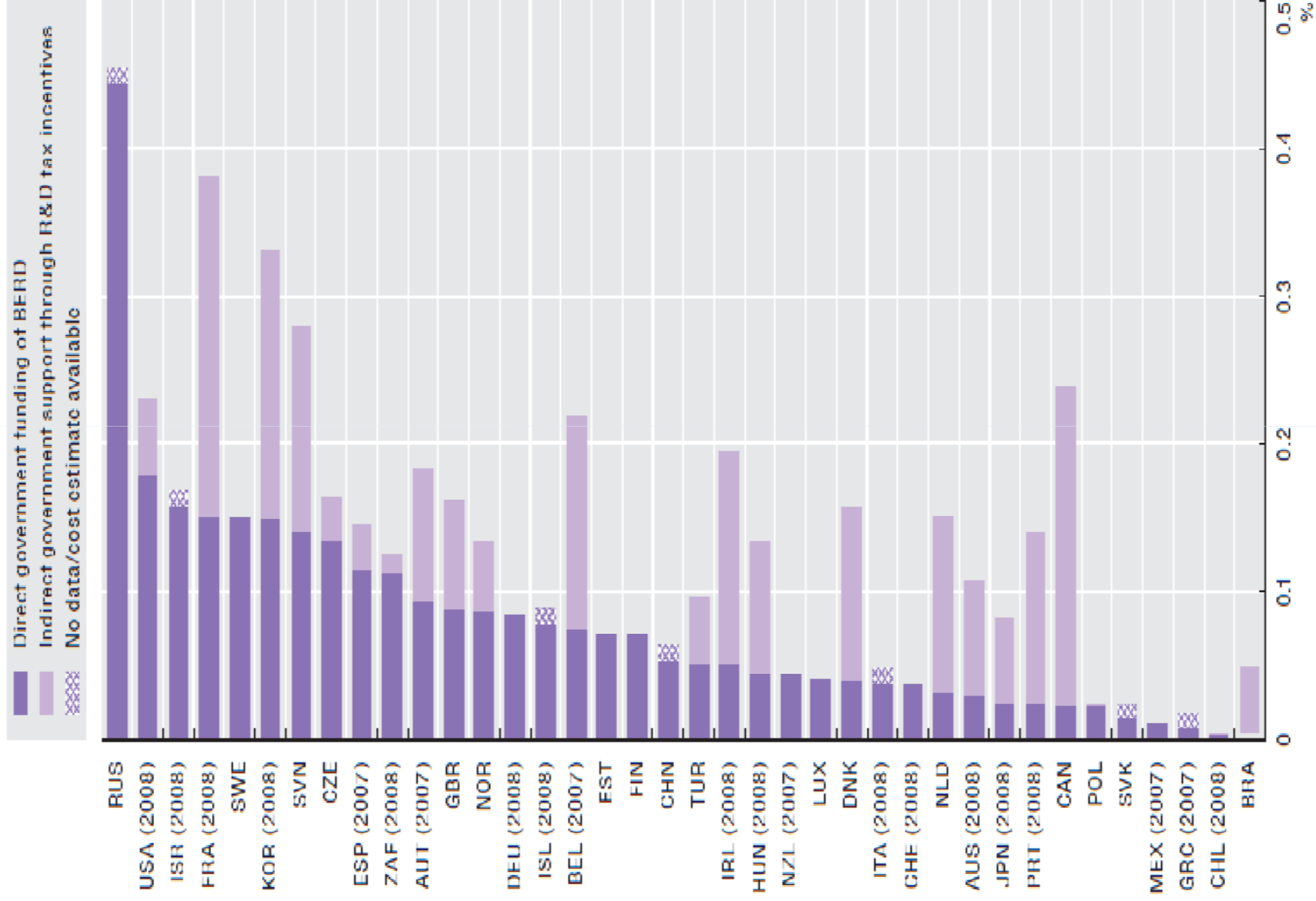
1. Theory.

2. Empirics.

3. How to improve.



As a percentage of GDP



1. Theory

- A natural starting point is to model the R&D subsidy process:
 1. A firm needs to decide whether or not to apply. Typically up to 90% decide not to.
 2. Given an application, the government agency needs to decide on the subsidy (e.g. in Finland 20 - 25% rejected).
 3. Firm negotiates with private sector financiers (variation in funding costs over firms).
 4. Firm decides whether or not to carry out the R&D project, and decides its size (e.g. Spain 30-50% do not invest in R&D) .

Theory c'ed

- The quality of R&D projects varies

1. across firms and

2. w/in firm across time.

- Therefore, decisions vary.

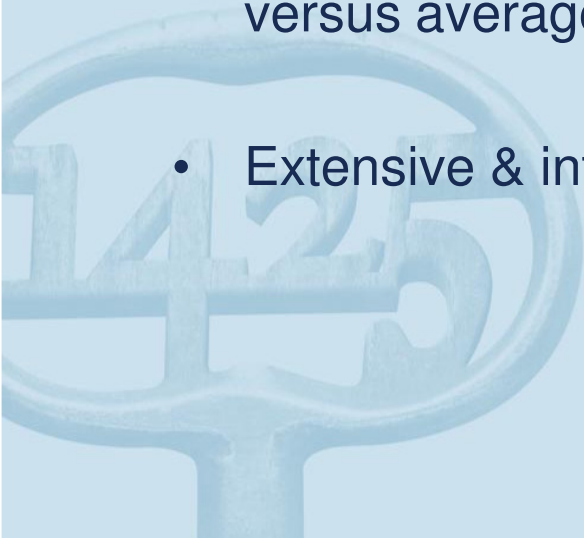


Theory c'ed

- At a general level, market failures a motivation for subsidies.
 1. Spillovers / appropriability.
 2. Financial market imperfections.
 3. Fixed costs of R&D.
- R&D subsidies not well understood theoretically.

Theory c'ed

- Larger spillovers always lead to higher subsidies.
- Financial market imperfections do not always lead to higher subsidies.
- R&D subsidies versus R&D tax credits: tailoring for the few versus averages for the many.
- Extensive & intensive margin.



Theory c'ed

- Additionality versus spillovers versus social benefits.
- A larger subsidy may “destroy” additionality.
- Additionality not 1:1 with social benefits.



2. Empirics

- Empirical literature large and growing (close to 100 studies).
- Increasingly data at the micro (firm, project) level.
- Generally speaking, additionality found.
- Problem: Failures in identification may lead to “false positive” results.
- Very little research on heterogeneity of effects.
- Toolbox has developed tremendously in the last few years.

3. How to improve?

1. Need to take the design of the support scheme into account.
2. Need to acknowledge and pay attention to effects being heterogenous across firms.
3. Need to understand better link between social returns and additionality.
4. Need a coordinator to ensure intl.'ly comparable data.
5. Need to build databases that allow intl. comparisons. (EU FP7 SIMPATIC – 5 country comparison).