



MEASURING R&D&I PROCUREMENT

– STATE OF PLAY & SELECTED RESULTS

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Procurement of R&D&I – incidence and impact

- OECD-NESTI project on “measuring the link between public procurement and innovation” (2011-14); EC-OECD partnership on innovation (DG Growth)
 1. Reassessment R&D&I measurement frameworks
 2. Stock-taking of measurement efforts
 3. Exploration of administrative data sources (TED, FPDS)

Final project report (2016): <http://oe.cd/pub-procure-inno>

- Today’s presentation
 1. Main data sources and indicators
 2. Methodological developments
 3. Quantitative analysis



Caution: monitoring vs. impact assessment



1. Public procurement in context of Frascati Manual – R&D

1. **Source-based** data collection from govts (GBARD)

- CAN/CHE (survey of govt.), BEL, IRL, ISR, NZL (budget data)

2. **Performer-based reporting** of R&D efforts and **sources of funds** (GERD)

- Only “direct procurement” of R&D considered;
- **FM2002: breakdown of government funds** into contracts (payments for a service) and grants (unconditional payments).
A few examples to draw upon for business:
 - USA (\$34bn, 84-95% in 2010); CAN (15% in 2011), ESP (€200m, 22% in 2012)
- **FM 2015, Chp.4: R&D transfer vs. exchange funds**
(=contracts) within external sources of funds:
 - i. compensatory return flow for service;
 - ii. delivery risk partly borne by funding unit;
 - iii. substantial rights to R&D results



2. Public procurement in context of Oslo Manual – Innovation

- **OM (2005): Innovation**=implementation of a new/significantly improved product (incl. services) or process (also org/mkt methods).
 - **Innovations introduced by firms** (alone or in partnership) in context of or in anticipation of procurement activities are captured but *no guidelines for identifying these separately*
 - Introduction of innovations **by other types of organisations** (e.g. public authorities) not considered in the Oslo Manual
- **Selected business innovation surveys linking PP and I**
 - Qs on “supply to government”: e.g. AUS, CAN, UK
 - Qs on role of procurement for innovation activity: e.g. CHN, KOR
 - Qs about role of procurement in driving innovation, e.g. DEU, recent developments → **CIS 2012 and CIS 2014:**
 - Had a procurement contract (domestic/foreign PSO)
 - Innovation activity as part of contract (required/not required)



3. Investigating the scope for using administrative procurement databases

1. Indicators of R&D procurement and innovation content: US federal ([FPDS-NG](#), 2000-11) & EU procurement ([TED](#), 2006-11)
 - Product code and company sector classifications
 - Innovation-related terms in product descriptions; RESEARCH, DEVELOP, R&D, INNOVAT, ADVANCE...

International comparability limited

2. Link between procurement and R&D inputs and outputs
Analysis based on matched FPDS, ORBIS, USPTO patent and trademark data
 - **Range of important correlations** between public procurement, reported R&D, trademark activity and firm turnover uncovered, e.g.
 - Reported R&D expenses rise by 0.2% as the value of past obligations increases by 10%.
 - Controlling for employment, capital stock, firm fixed-effects
 - **Causal analysis** (e.g. selection issues)



Concluding remarks

1. Lots of **progress on survey-side** → FM and OM **implementation**
2. Limitations **but also opportunities** of administrative sources
 - Limited int. comparability of indicators, potential for analytical uses
3. Different options for a measurement system to meet different user needs – trade offs
 - Problems/challenges target-driven measurement (Goodhart's law)
 - Cognitive/knowledge issues in establishing causal links → Indirect impact assessment: **data infrastructure and research design**:
 - Inputs, outputs, outcomes ↔ action vs. programme vs. policy
 - Selection, endogeneity, measurement error, ...
→ matching IVs, RDD, CDM model
 - [OECD microBeRD project](#) (R&D tax incentives) – EC DGRTD



Thanks

Appelt, S. and F. Galindo-Rueda (2016), “Measuring the Link between Public Procurement and Innovation”, OECD Science, Technology and Industry Working Papers, 2016/03, OECD Publishing, Paris. <http://dx.doi.org/10.1787/5jlvc7sl1w7h-en>

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