

Expert workshop
The effectiveness of
national research funding systems

Brussels, 6 May 2014



Results of the FundSys study

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A study on behalf of the
European Commission



dialogic
innovatie • interactie

Objectives & methodology



- **Providing an overview of the variation in the competition-based allocation of public *research* funding**
- **Assessing the relation between competitive research funding and research performance**
- **Methodology:**
 - **desk research (quantitative and qualitative data)**
 - **8 country studies: FR, UK, DE, PL, NL, RO, SE, CH**
 - **In-depth interviews with both research funders and research performers (n=13)**
- **Timeframe: February – April 2014**

Country Studies



Country	Selected Institutions
France	<ul style="list-style-type: none">• National Agency for Research (ANR)• French National Institute for Agricultural Research (INRA)
United Kingdom	<ul style="list-style-type: none">• Research Councils UK (RCUK)• Higher Education Funding Councils for England (HEFCE)
Germany	<ul style="list-style-type: none">• German Research Foundation (DFG)
Poland	<ul style="list-style-type: none">• National Science Centre (NCN)• National Centre for Research & Development (NCBiR/NCRD)
The Netherlands	<ul style="list-style-type: none">• Netherlands Organisation for Scientific Research (NWO)• AgencyNL/Netherlands Enterprise Agency (RVO.nl)
Romania	<ul style="list-style-type: none">• Executive Unit for Funding Higher Education, Scientific Research, Development and Innovation (UEFISCDI)
Sweden	<ul style="list-style-type: none">• Swedish Governmental Agency for Innovation (VINNOVA)
Switzerland	<ul style="list-style-type: none">• Swiss National Science Foundation (SNSF)• Commission for Technology and Innovation (CTI)

Different types of funding



	Non-programmatic	Programmatic	Project-based
Content of research	<div style="border: 1px solid black; padding: 5px; text-align: center;"> <i>Theme</i> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 60px; text-align: center;"> <i>Topic</i> </div> </div>	<div style="border: 1px solid black; padding: 5px; text-align: center; background-color: #e0f0ff;"> <i>Theme</i> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 60px; text-align: center;"> <i>Topic</i> </div> </div>	<div style="border: 1px solid black; padding: 5px; text-align: center; background-color: #e0f0ff;"> <i>Theme</i> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: 60px; text-align: center;"> <i>Topic</i> </div> </div>
Funders	<ul style="list-style-type: none"> • Government (direct) • Funding agency 	<ul style="list-style-type: none"> • Funding agency • HEI/PRO (internal allocation) 	<ul style="list-style-type: none"> • Funding agency • HEI/PRO (internal allocation)
Recipients	<ul style="list-style-type: none"> • HEI/PRO • Faculty • Research group • Individual 	<ul style="list-style-type: none"> • HEI/PRO • Faculty • Research group • Individual 	<ul style="list-style-type: none"> • HEI/PRO • Faculty • Research group • Individual
Type of co-performers	<ul style="list-style-type: none"> • With firms (PPP) • With abroad • (collaboration) 	<ul style="list-style-type: none"> • With firms (PPP) • With abroad • (collaboration) 	<ul style="list-style-type: none"> • With firms (PPP) • With abroad • (collaboration)
Examples	<ul style="list-style-type: none"> • Block grants <ul style="list-style-type: none"> • Incremental • Formula-based • Infrastructure • Curiosity-driven <ul style="list-style-type: none"> • Contract-based 	<ul style="list-style-type: none"> • Mission-oriented • Thematic • Competence centers 	<ul style="list-style-type: none"> • Contract research <ul style="list-style-type: none"> • Effort-based • Performance-based • Mission-based • Research projects <ul style="list-style-type: none"> • Within programme • Stand-alone
	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <div style="display: inline-block; width: 20px; height: 10px; background-color: #e0f0ff; border: 1px solid black; margin-right: 5px;"></div> Defined by principal </div> <div style="border: 1px solid black; padding: 5px;"> <div style="display: inline-block; width: 20px; height: 10px; background-color: white; border: 1px solid black; margin-right: 5px;"></div> Defined by agent </div>		

Performance-based funding

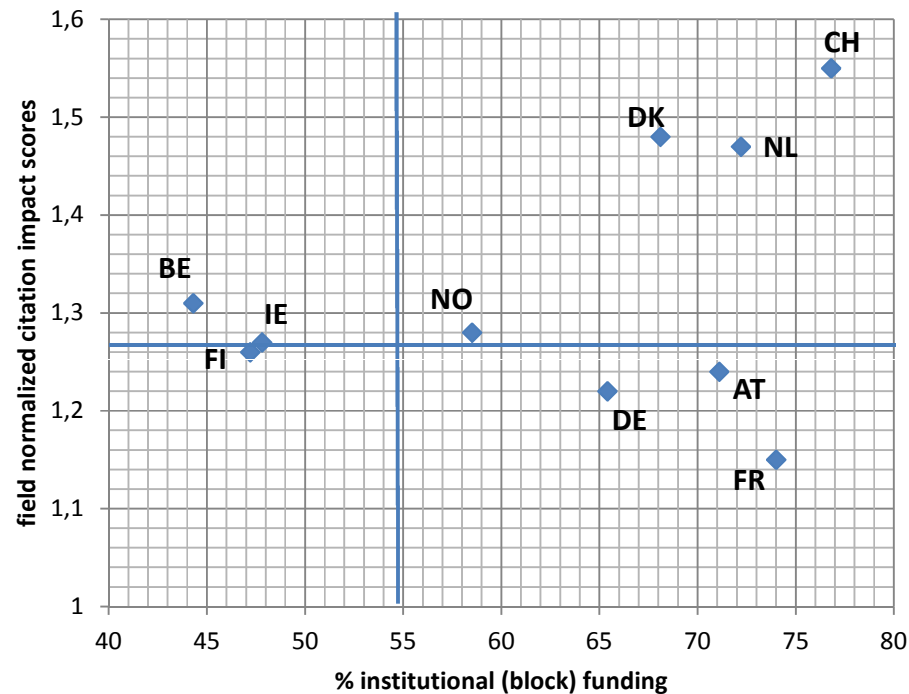


Rationales:

- Increasing productivity
- Replacing traditional command-and-control systems
- Stronger service orientation
- Devolution
- Formulating policy
- Enhanced accountability

'Encouraging Excellence'

Research Funding & Performance (1)



Source: OECD, STI Outlook, 2012 and OESO; Thomson Reuters/CWTS Web of Science, Edited by CWTS/NIFU

'No clear-cut direct relationship'

Research Funding & Performance (2)



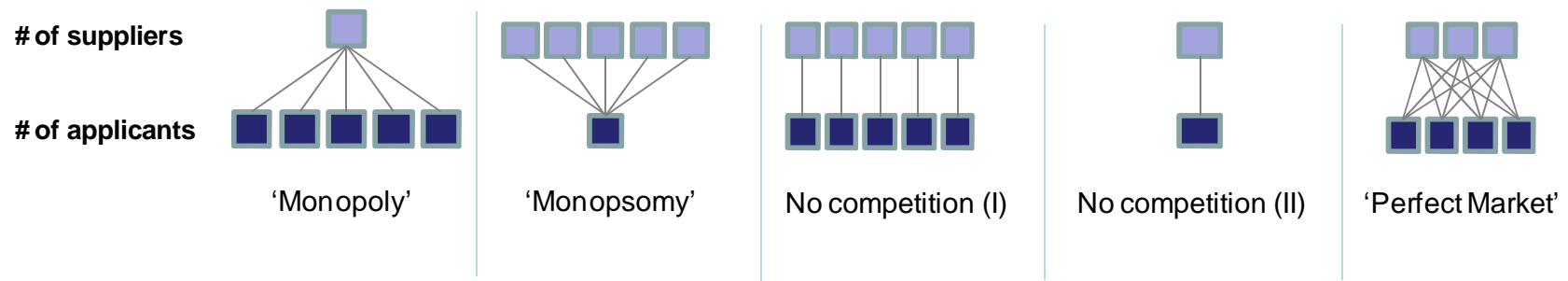
Different explanations:

- Competitive funding is not (fully) captured by these funding indicators
- Scientific performance is not (fully) captured by these performance indicators
- There (really) is no relationship between competitive funding and scientific performance

Decomposing competition

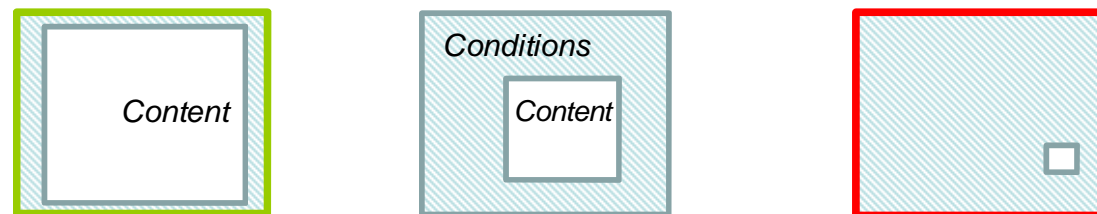




Competition refers to the (ratio between) the *number* of suppliers (here: grantors) and consumers (here: applicants)



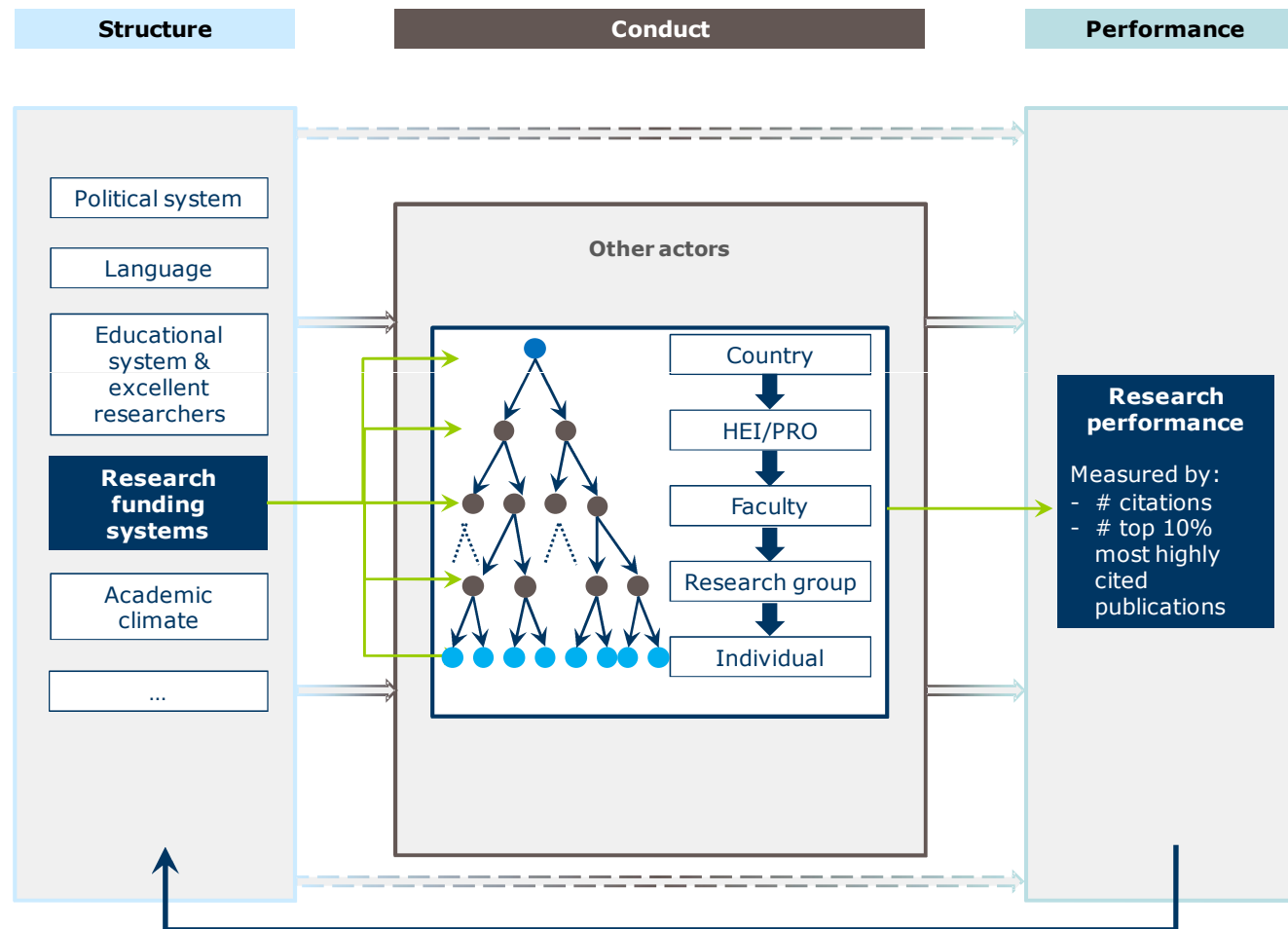
Degrees of freedom (df) refers to the *nature* of the relationship (contract) between the grantor and applicant

Many degrees of freedom (df = 1) \longrightarrow Few degrees of freedom (df = 0)

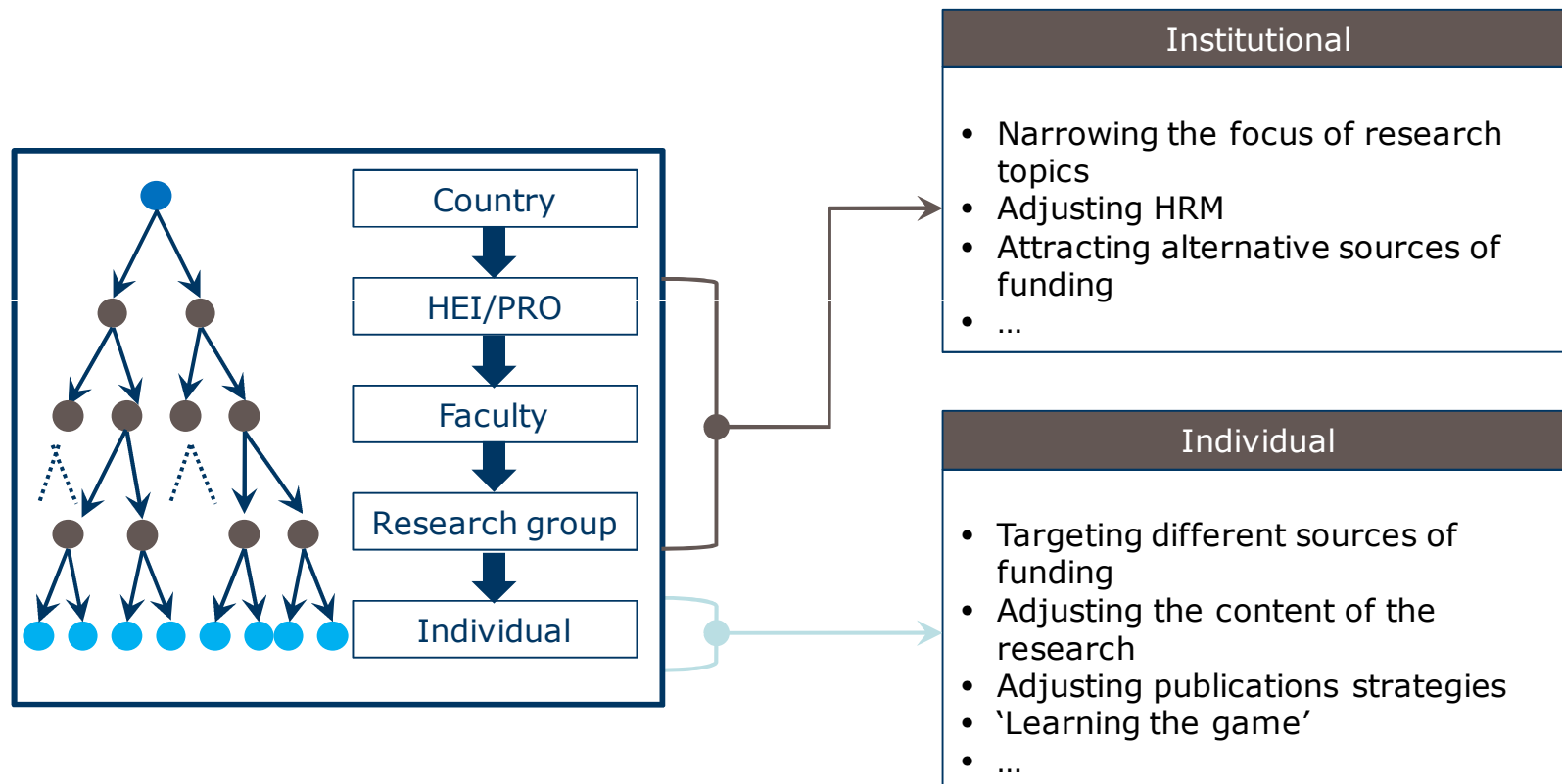


-  Defined by principal (grantor)
(the more conditions the less freedom)
-  Defined by agent (applicant)

Structure – Conduct - Performance



Conduct



Conclusions



- In many countries there is a shift towards more competitive or performance-based funding (PBF)
- There is no straightforward direct relation between competitive funding and performance
 - There can be too much competition (diminishing returns)
 - Other factors play an important role as well
 - Competition seems to manifest itself in other ways
 - Conduct is an important intermediating variable
- Current indicators for measuring both competition and performance have (severe) limitations