

Funding for Performance in European Higher Education: Trends and Lessons

Ben Jongbloed

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Study on the State and effectiveness of national funding systems of higher education to support the European Universities Initiative

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Project funded by
European Union



Center for
Higher Education
Policy Studies





- Does **performance-based funding (PBF)** work and does/can it support the European University Alliances?

- Looking at the Core funding of HEIs
- in the 27 EU Member States
- and the effects of PBF – intended & unintended



Our evidence

- Academic literature on PBF
- A survey among all 27 ministries of (higher) education in the EU member states
- Interviews with representatives from the HE sectors in the countries (ministry; academics, ...)
- Eight country case studies and two Alliances case studies
- Existing evaluations of funding systems in the (eight) countries - and beyond (EU, UK, US, Canada) – desk research
- An Expert meeting with 20+ experts on Higher Ed funding

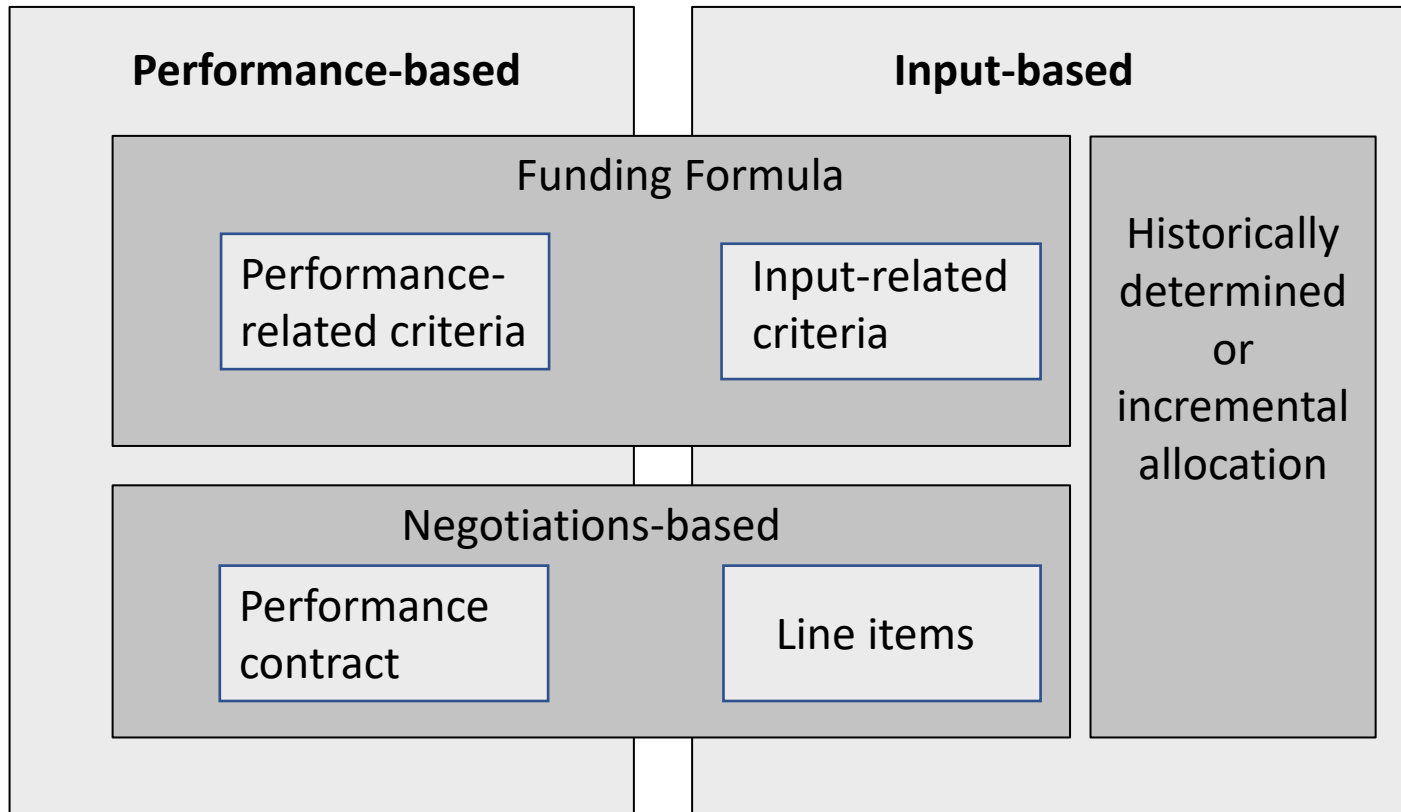


The Country Researchers in our PBF project

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Core funding mechanisms

Other funding mechanisms



Competitively awarded funding
(e.g., by research councils & excellence funding)

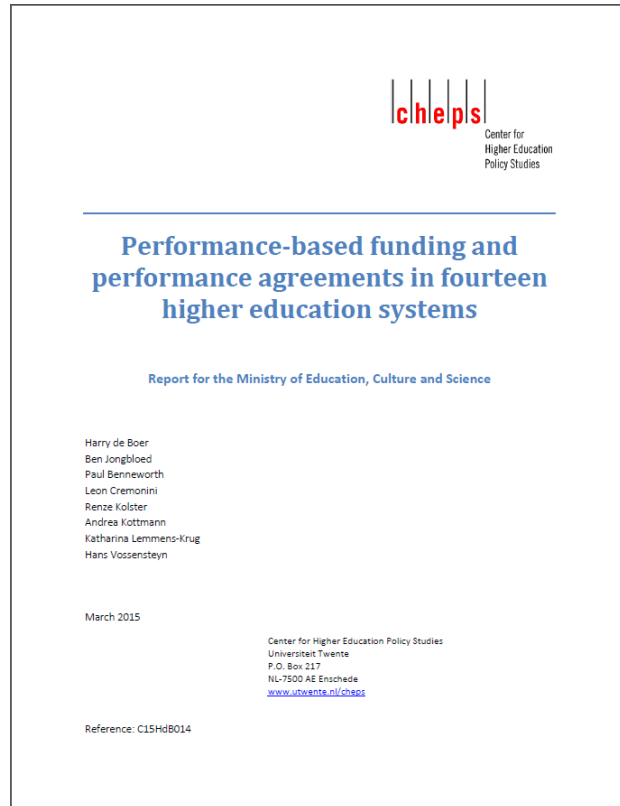
Other project funds
(e.g., specific grants; matching funds)

Literature

2020 OECD report by Weko,
Sarrico et al:



An earlier CHEPS report on
Perf-based funding



a recent (2022) EUA report



What do we know from literature?

- Little research on impact of PBF on Teaching & Learning (US, Nordics, Nethlds)
- No firm conclusions here
- More studies on PBF & its impact on research
- Causality: difficult to prove

³⁰ E.g., Hillman et al., 2015; Kivistö & Kohtamäki, 2016; Ortagus et al., 2020.

³¹ Aagaard, 2015; Kivisto et al., 2017; Mouritzen & Opstrup, 2020

³² Jongbloed et al., 2019.

³³ OECD (2020), Resourcing higher education, Paris: OECD.

³⁴ Hillman, N. (2016). Why performance-based college funding doesn't work. The Century Foundation Think Tank; Umbridge, M.R., Fernandez, F., & Ortagus, J.C. (2017). An examination of the (un)intended consequences of performance funding in higher education. *Educational Policy*, 31.5: 643-673; Kelchen, R. (2018). Do performance-based funding policies affect underrepresented student enrolment? *The Journal of Higher Education*, 89: 702-727.

³⁵ Dougherty et al. (2014). Implementing performance funding in three leading states: Instruments Outcomes and Unintended impacts. CCRC Working Paper No. 74; "QAF One Pager 2020-25." Retrieved from <https://www.tn.gov/content/dam/tn/thec/bureau/aa/academic-programs/qaf/QAF%20One%20Pager%202020-25.pdf>

³⁶ Sanford, T., & Hunter, J. M. (2011). Impact of performance funding on retention and graduation rates. *Education Policy Analysis Archives*, 19, 33.

³⁷ Hillman, N. W., Hicklin Fryar, A., & Crespín-Trujillo, V. (2018) Evaluating the impact of performance funding in Ohio and Tennessee. *American Educational Research Journal*, 55(1), 144-170; Ward, J. & Ost, B. (2021). The Effect of Large-scale Performance-Based Funding in Higher Education. *Education Finance and Policy* 16(1): 92–124.

³⁸ Callahan. M.K. at al. (2017). Implementation and Impact of Outcomes-Based Funding in Tennessee. Research for Action. Retrieved from <https://www.researchforaction.org/publications/implementation-impact-outcomes-based-funding-tennessee>

³⁹ Li, A. Y., & Ortagus, J. C. (2019). Raising the stakes: Impacts of the Complete College Tennessee Act on underserved student enrollment and sub-baccalaureate credentials. *The Review of Higher Education*, 43(1), 295-333.

⁴⁰ Li, A.Y., & Ortagus, J.C. (2019); Chan, M., Mabel, Z., & Mbekeani, P. P. (2021). *Incentivizing Equity? The Effects of Performance-Based Funding on Race-Based Gaps in College Completion*. EdWorkingPaper No. 20-270.

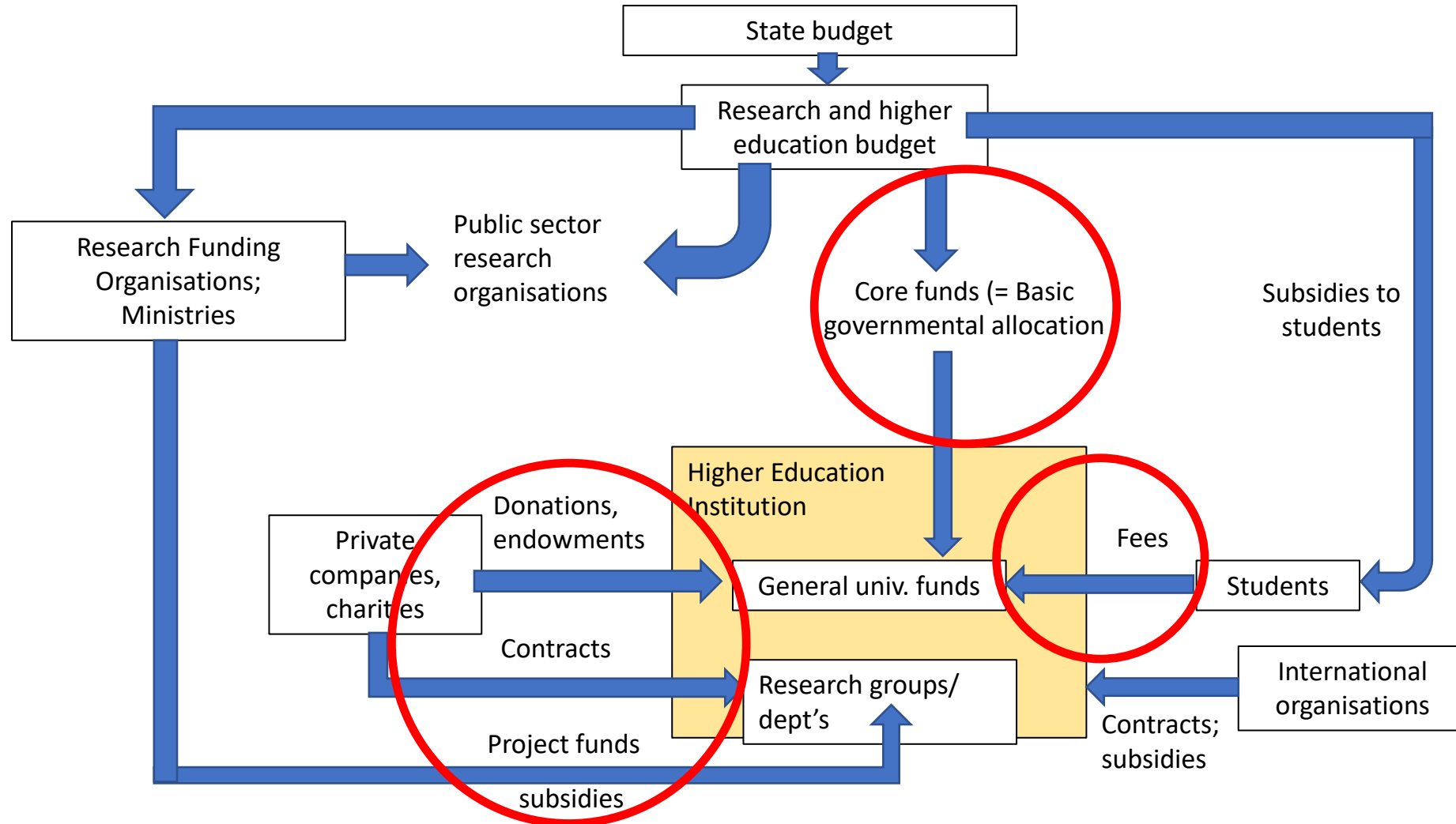
⁴¹ Callahan. M.K. at al. (2017). Implementation and Impact of Outcomes-Based Funding in Tennessee. Research for Action.

⁴² Ness, E. C., Deupree, M. M., and Gundara, D. (2015). *Campus Responses to Outcomes-Based Funding in Tennessee: Robust, Aligned, and Contested*. Nashville: Tennessee Higher Education Commission.

⁴³ See, e.g., Hicks, D. (2012). Performance-based university research funding systems. *Research Policy*, 41(2), 251-261 and Debackere, K. et al. (2017). *Performance-based funding of university research*. Brussels: Publications Office of the European Union. See also: Schneider, J. W., Aagaard, K., & Bloch, C. W. (2017). Reply to van den Besselaar and Sandström. *Research Evaluation*, 26(4), 352-352.

⁴⁴ Sivertsen, G., & Aagaard, K. (2017), The effects of performance-based research funding systems, *R-QUEST Policy Brief*, 2, 1-4.

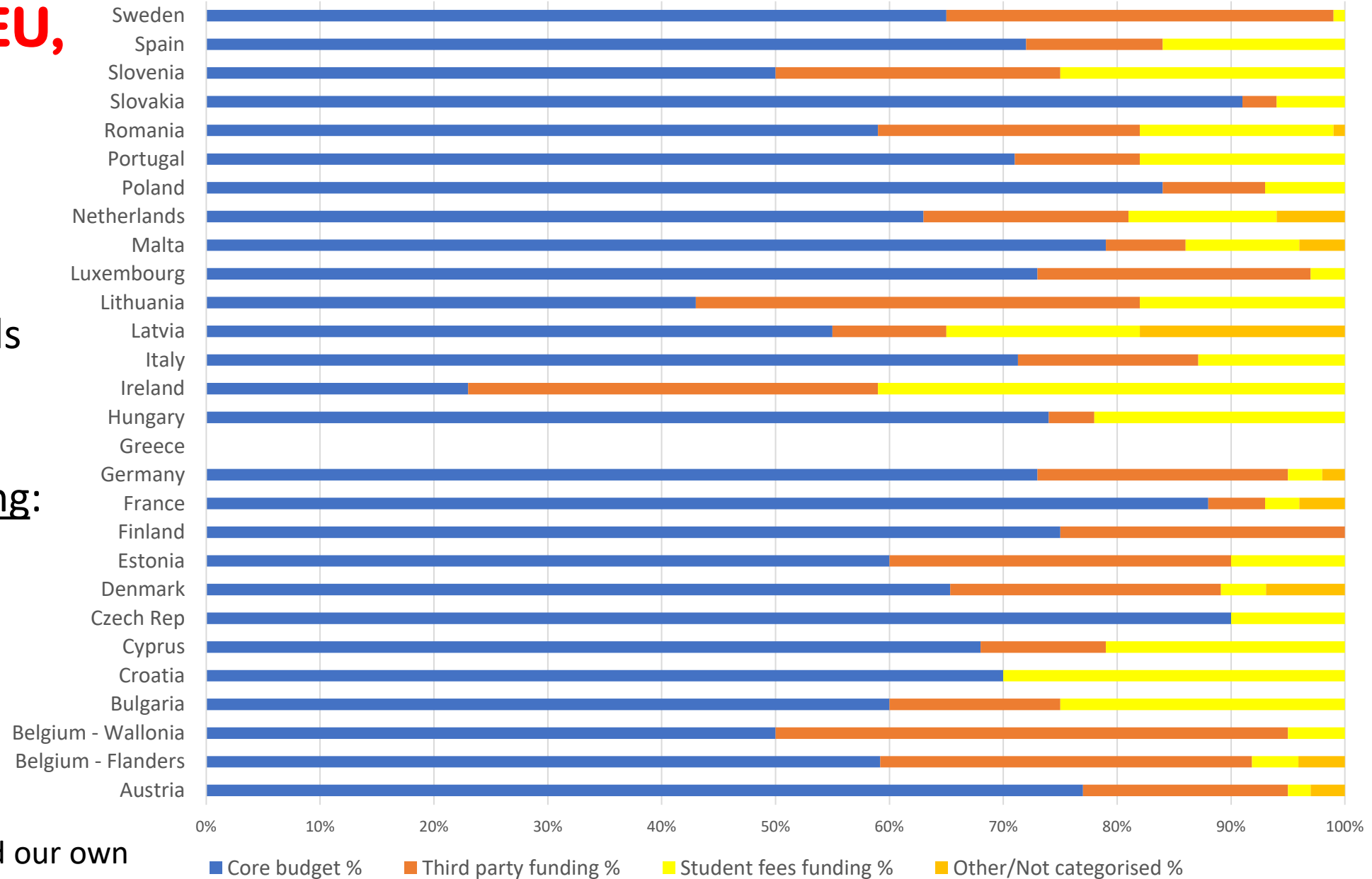
Revenues of higher education institutions



Revenues of HE institutions in EU, 2019-2020

- Core funding: on average two-thirds of HEIs' revenues
- Third party funding: 20%
- Tuition fees: 13%

Revenue composition, 2019/2020



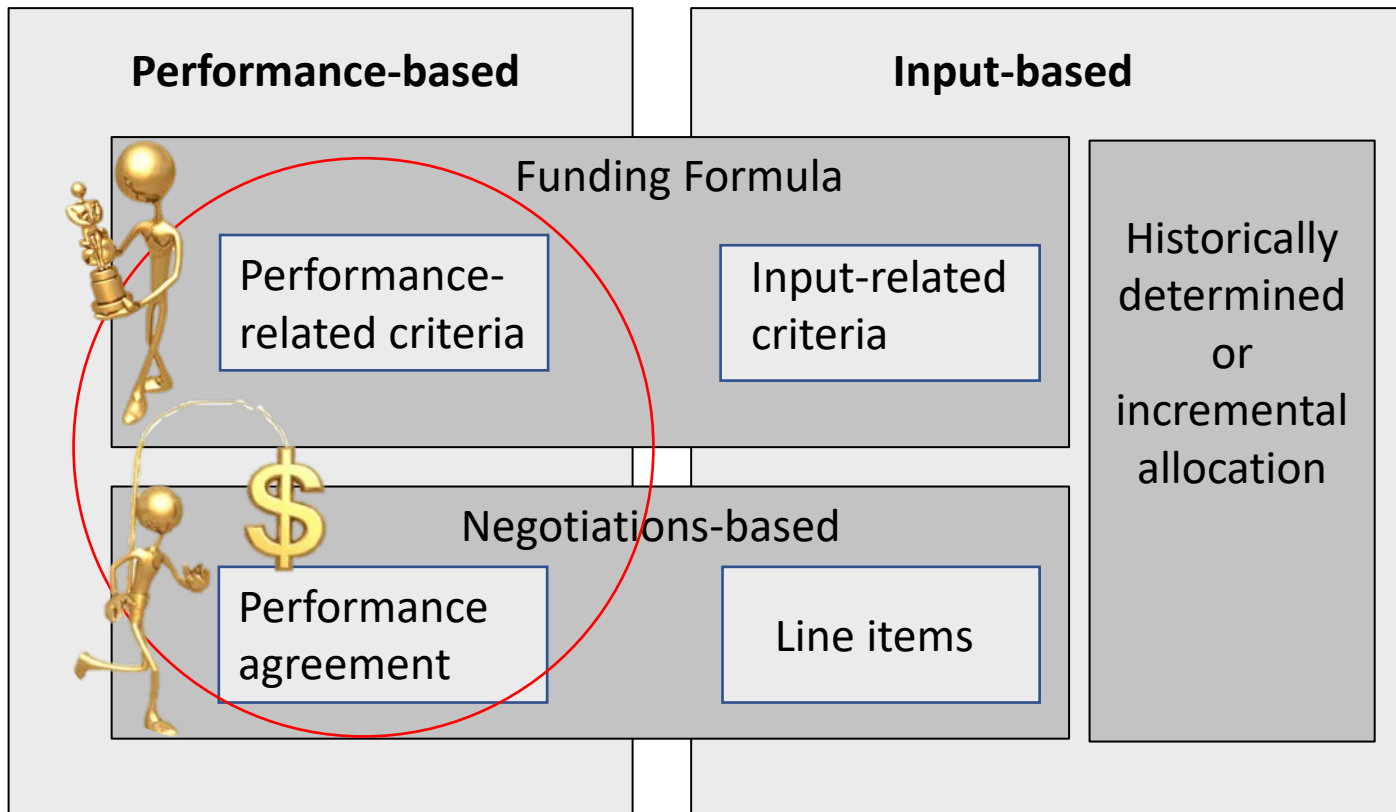
Data from ETER database and our own ICF/CHEPS survey

Performance-based funding (PBF)

- Funding policy that uses a **formula** or a **contract/agreement** to determine the amount of public funding awarded to higher education institutions (HEIs) and where the formula and/or the contract includes measures of **performance** (i.e., outputs, outcomes, impacts).
- PBF can be used to fund **all three main missions** of HEIs: education, research and societal engagement/valorisation (*third mission*)
- **Examples:**
 - A performance-based formula allocates core funds to HEIs based on weighted numbers of diplomas (BA, MA, PhD), ECTS credits, research publications or external grant volume.
 - In the case of a performance agreement, each individual HEI agrees with the funding authority on the performance (Ed, Research, 3rd mission) to be delivered in the years ahead, in return for its core funding.



Core funding mechanisms



Other funding mechanisms

Competitively awarded funding
(e.g., by research councils; excellence grants)

Other project funds
(e.g., specific grants; matching funds)

Core funds for HEIs and Competitive funding

Institutional core funding

Allocation is linked to specific missions and its focus is on institutions

Allocated in the form of block grants to meet broad objectives and outcomes

Ongoing allocations subject to periodic performance assessment against output and outcomes indicators

Wide discretion over expenditure

Provides stable long-term support for capability building

Competitive

Allocation targets excellence and its focus is on activities that can cut across institutional boundaries

Allocated competitively under contracts with individuals, research groups and organisations

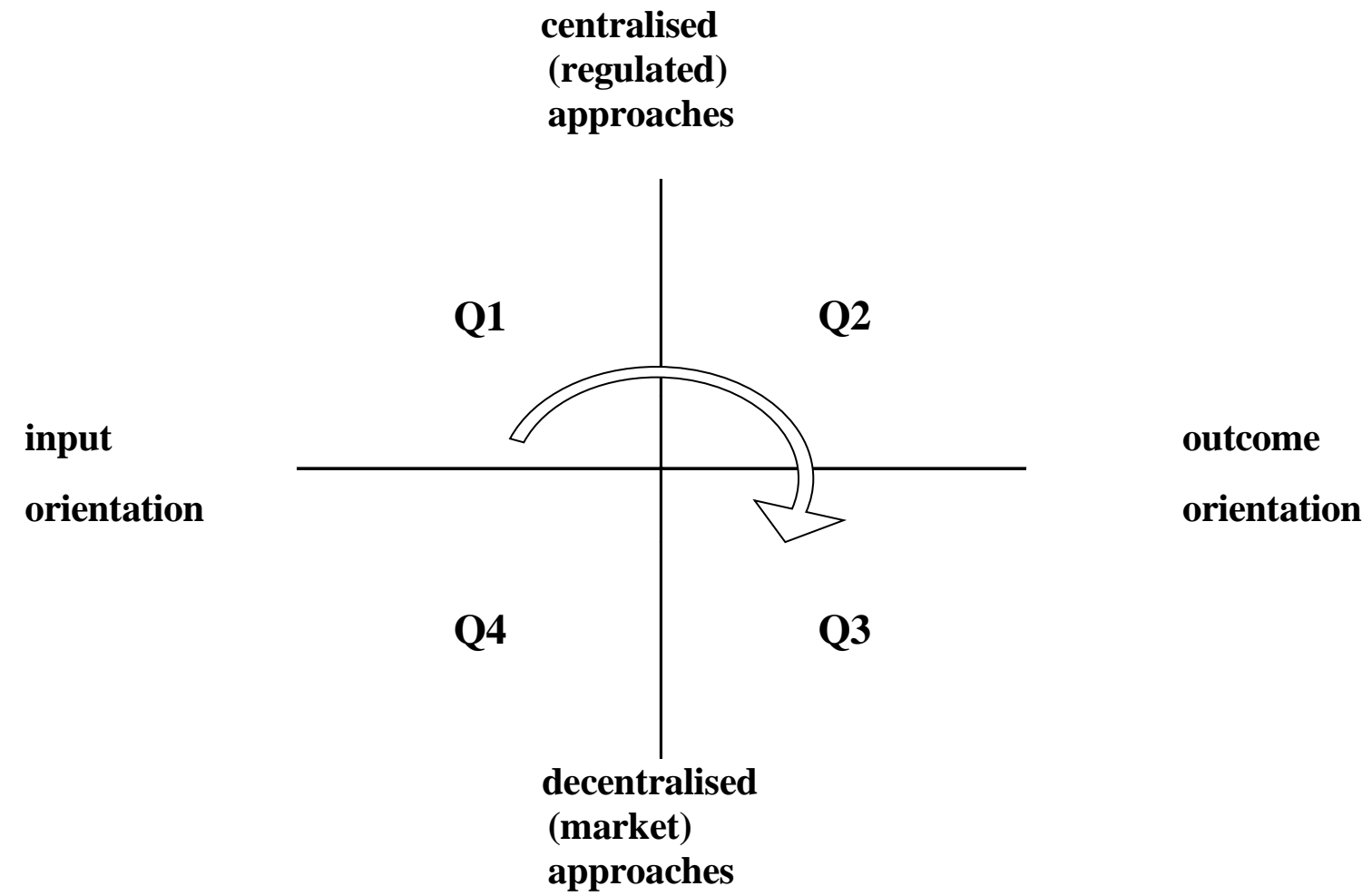
Allocations determined on the basis of international peer assessment of individual proposals and results evaluated against output and outcome indicators

Targeted to specific activities

Provides the flexibility to respond quickly to emerging priorities

Developments in funding mechanisms

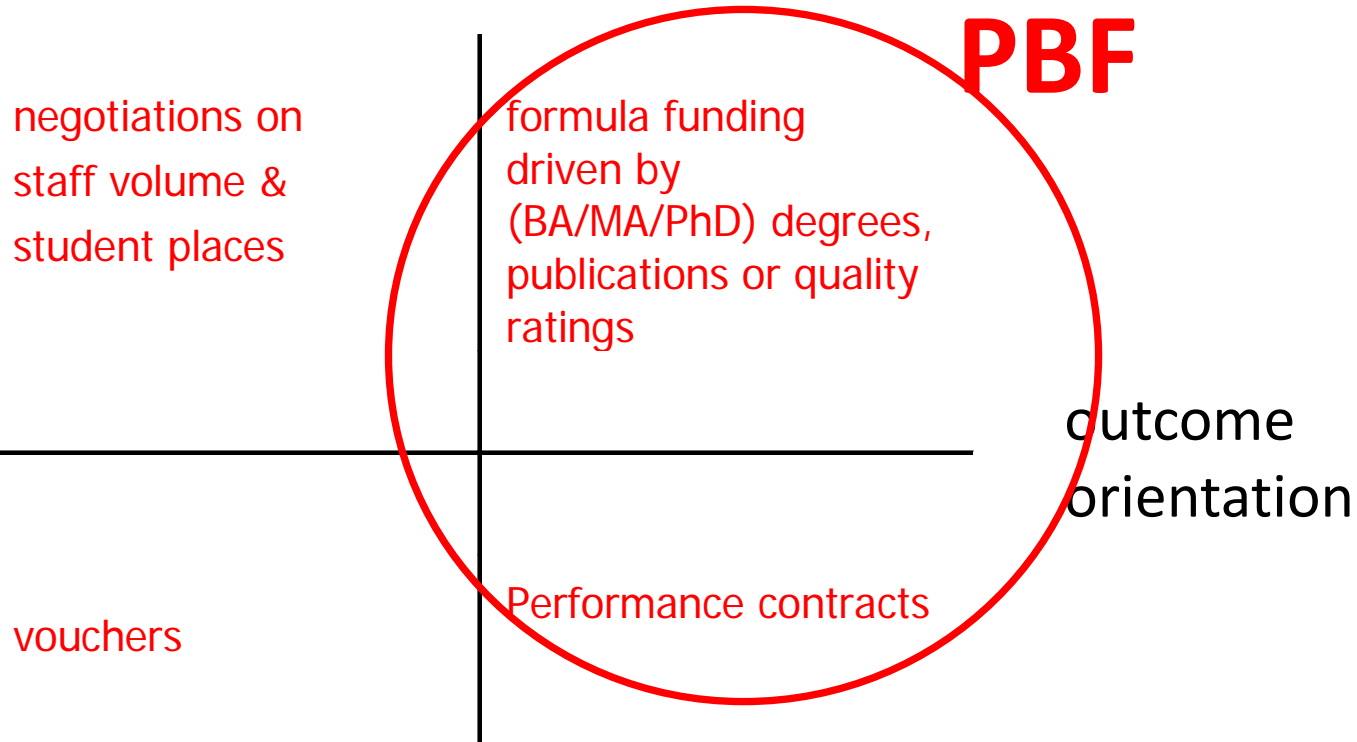
Four quadrants



Examples of public funding

centralised
(regulated)
approaches

input
orientation



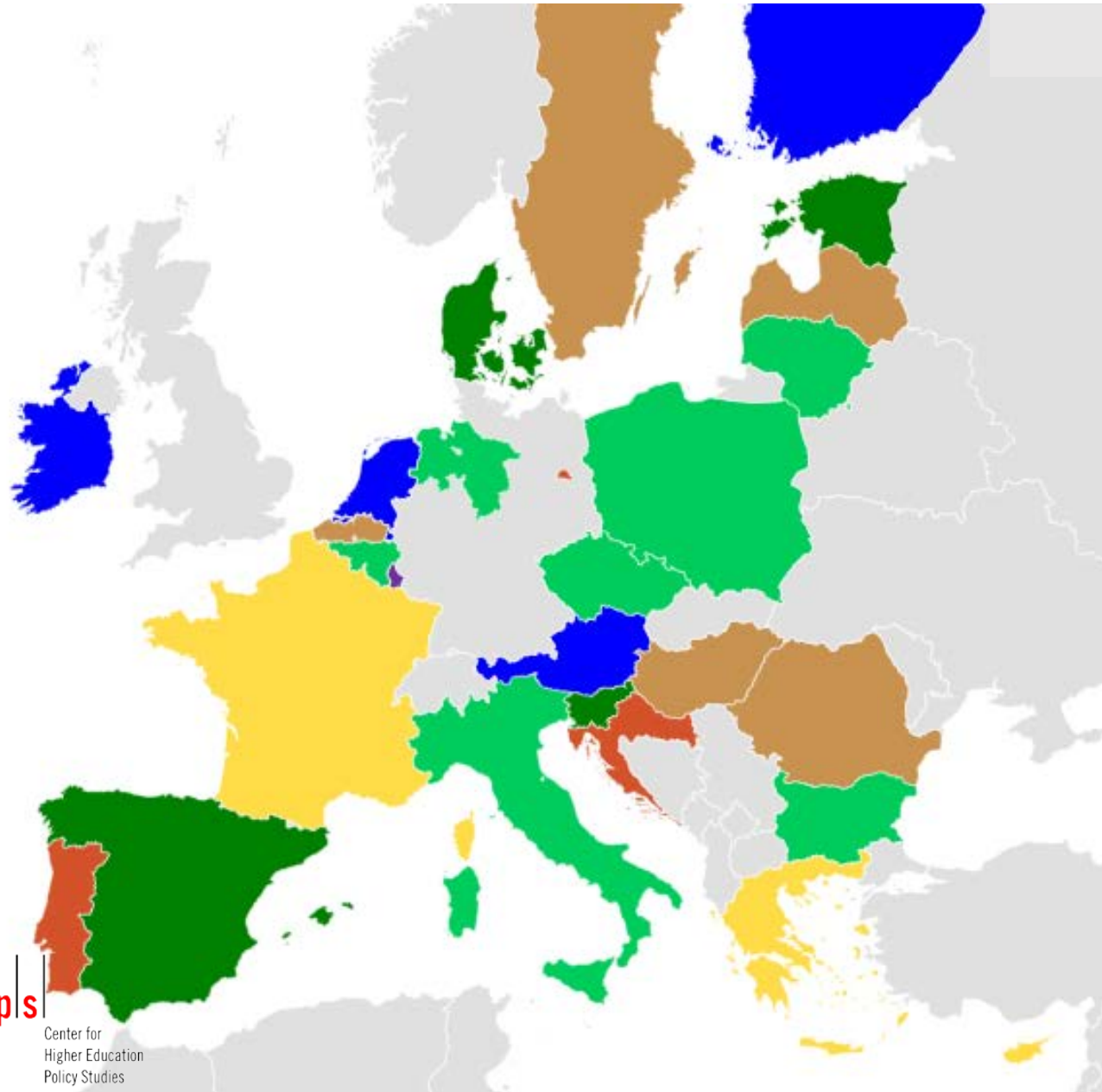
decentralised
(market)
approaches

See: Dougherty & Natow (2020), Perf Based Funding (**PBF**) for HE

Developments in core funding mechanisms

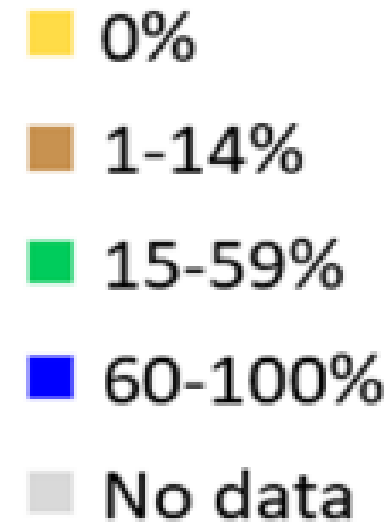
- Funding systems in Europe vary widely
 - and are discussed/changed a lot ..(reforms; additions; tweaks & twists)
- Performance-Based Funding (PBF) has become widespread
 - PBF is expressed in a funding formula, a funding agreement/contract, or a combination of the two
- Frequently used *performance* indicators in funding *formulas* are:
 - for *Education*: number of BA/MA degrees; graduation rates
 - for *Research*: external research funds obtained; number of doctorates
 - Most formulas also include activity/input indicators (students; ECTS; PhD candidates) and historical components (fixed amounts)
- Many EU higher education systems have moved from formula-/ indicator-based approaches to more *dialogue-based funding systems* (e.g., through performance agreements), focusing more on *qualitative* criteria

A large variety in funding mechanisms ...

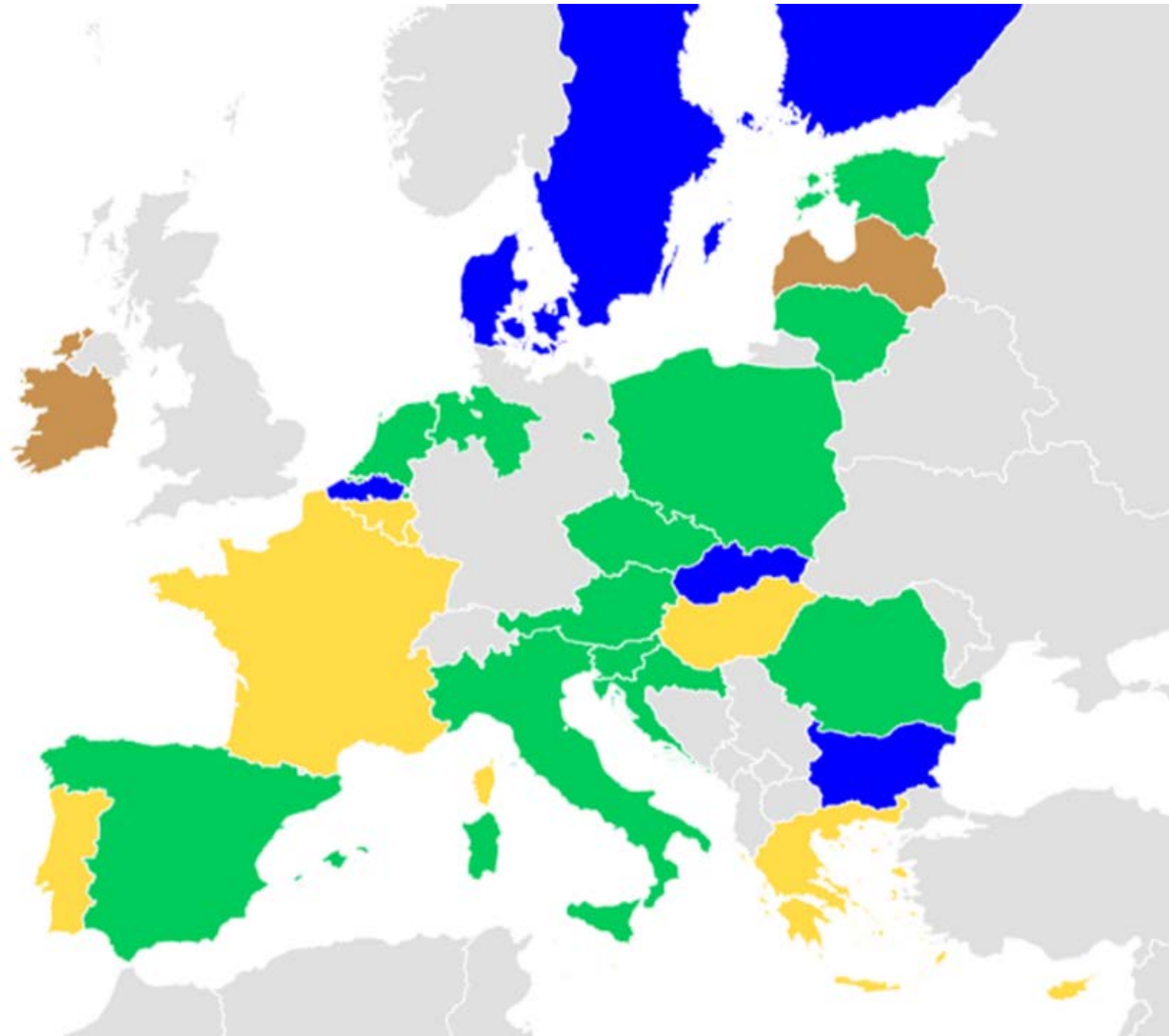


- Formula
- Contract
- Other/Incremental/Historical
- Formula + Other/Incremental/Historical
- Contract + Other/Incremental/Historical
- Formula + Contract
- Formula + Contract + Other/Incremental/Historical
- No data

... with different shares of funds tied to performance



The share of PBF increased in 17 EU jurisdictions over 2010-2020



Degree of performance orientation

No PBF (0%)	Small (1-14%)	Moderate (15-59%)	High (60-100%)
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Formula-based

HU

LV

RO

SE BE-FL

SK

Formula + performance agreement and/or other

BE-WA

IE

LT

BG

DK

FI

IT

CZ

NL

DE-LS

PL

EE

SI

AT

ES

Negotiations-based (perform. agreement and/or other)

EL

MT

PT

FR

LU

CY

HR

DE-BE

- Country in **RED** = PBF share increased after 2010
- Circled countries = selected case studies (eight)

Questions for eight country cases

1. How are the PBF systems designed?
2. What are their goals?
3. What are their impacts on education, research and internationalisation?
4. Do the systems enable internationalisation and transnational alliances?
5. What lessons can be drawn from the case studies?



AUSTRIA

BULGARIA

DENMARK

FINLAND

GERMANY -
BERLIN

ITALY

NETHERLANDS

POLAND

Table 4. Description of the eight selected performance-based funding systems

	AUSTRIA	BULGARIA	DENMARK	FINLAND	GERMANY - BERLIN	ITALY	NETHERLANDS	POLAND
Share of PBF in total core funding of HEIs (estimate)	55%	60%	85%	76%	50%	30%	26%	15%
Output/ outcome indicators used in formula	<ul style="list-style-type: none"> • Number of graduates • Students actively taking exams • Particularly active students (i.e. taking more than 40 ECTS) • Third party funding • Doctoral schools 	<ul style="list-style-type: none"> • Scores received in programme & institutional accreditations • Evaluation of teaching • Exclusive academic staff • Graduate earnings & graduate employment • Number & impact of publications • PhDs • Patents • Number & citation rate of publications and patents • Professional PhDs 	<ul style="list-style-type: none"> • ECTS attained by students • PhDs • Bibliometrics • External grants • Survey-based quality measurement • (Graduate employment and time-to-degree temporarily put on hold) 	<ul style="list-style-type: none"> • Degrees • Graduate employment • Publications • External / competitive grants won • PhD degrees • Student feedback • ECTS in continuous learning 	<ul style="list-style-type: none"> • Enrolments within normative time-to-degree • Enrolment of vocationally qualified students • Degrees • External grants • Fellowships & prizes won • Collaborative PhDs • Gender equality of academic staff • Degrees in teacher education • Part-time BA degrees 	<ul style="list-style-type: none"> • National research assessment • HR policy (attractiveness in term of faculty recruitment) • Choice of indicators reflecting improvements in education and research quality (including access, student services, and international student mobility) 	<ul style="list-style-type: none"> • Enrolments within normative time-to-degree • Degrees • PhDs 	<ul style="list-style-type: none"> • Research evaluation exercise grades (A-C) • External grants/ Project funding won • Internationalisation of staff & students
Funding contract/ performance agreement	Performance contract (3 years)	Management contract with rector (currently only link to rector's salary)	Strategic Framework Contract (4 years)	Performance agreement (4 years)	<i>Hochschulvertrag</i> (5 years)	No contract	Quality agreement (6 years)	No contract

Table 5. The positive impacts of PBF as reported for the eight case study countries

	AUSTRIA	BULGARIA	DENMARK	FINLAND	GERMANY - BERLIN	ITALY	NETHER-LANDS	POLAND
Education overall	<ul style="list-style-type: none"> • More institutional attention given to student choice (study entry & orientation) 	<ul style="list-style-type: none"> • Quality of education improved as evidenced by increased ratings 	<ul style="list-style-type: none"> • Improved degree completion • Reduced time to degree 	<ul style="list-style-type: none"> • Reduced time to degree • Increased completion • Study progress (ECTS) • Quality of education 	<ul style="list-style-type: none"> • Degree completion improved somewhat • Universities taking on more students (also in teacher training) and are more fully utilizing their study places 	<ul style="list-style-type: none"> • More attention for education quality (but no hard evidence) 	<ul style="list-style-type: none"> • Higher completion and slightly reduced drop-out in research universities • Placing quality of education (T&L) on HEIs' agenda 	<ul style="list-style-type: none"> • Quality of education
Research overall			<ul style="list-style-type: none"> • HEIs and staff focus more on publications and grant acquisition • Increases in external funding of HEIs • PhD volume 	<ul style="list-style-type: none"> • Higher publication output • Improved research quality 	<ul style="list-style-type: none"> • Some improvement in research quality 	<ul style="list-style-type: none"> • Improvement in the average quality of research output 	<ul style="list-style-type: none"> • PhD output increased initially 	<ul style="list-style-type: none"> • Improvement in research quality • Increase in research staff • Establishment of doctoral schools
Internationalisation				<ul style="list-style-type: none"> • Mobility and international enrolment increased • International research collaboration improved 		<ul style="list-style-type: none"> • Reduced gap in research performance compared to international competitors • Increase in double degree programmes 		

Table 6. The negative impacts of PBF as reported for the eight case study countries

	AUSTRIA	BULGARIA	DENMARK	FINLAND	GERMANY-BERLIN	ITALY	NETHERLANDS	POLAND
Education overall		<ul style="list-style-type: none"> Graduate employment criticised because beyond control of HEIs 	<ul style="list-style-type: none"> Graduate employment indicator perceived as penalty and source of income insecurity Special needs students penalised by “duration of study” indicator 				<ul style="list-style-type: none"> More focus on quantitative indicators at expense of qualitative issues 	<ul style="list-style-type: none"> Focus on research at expense of education and regional mission
Research overall			<ul style="list-style-type: none"> Bibliometrics indicator creates inappropriate incentives Fewer Danish language publications Increased competition 	<ul style="list-style-type: none"> Fewer publications in Finnish 		<ul style="list-style-type: none"> HEIs focus on specific research fields to improve bibliometrics Five-year research evaluation period seen as too long 		<ul style="list-style-type: none"> Unequal treatment of research fields Lack of transparency of the evaluation system
Other/general	<ul style="list-style-type: none"> Smaller universities fear being neglected or having specific disciplines being underfunded 	<ul style="list-style-type: none"> Regional inequalities 	<ul style="list-style-type: none"> Reporting complexity and, for contracts, outcome uncertainty Unevenness between HEIs because of differences in external funding opportunities and stressing of STEM 	<ul style="list-style-type: none"> Lack of dedicated indicator leads to neglect of engagement Increased admin. workload Homogenisation of HEIs Increased competition between HEIs because of zero sum game Large HEIs at advantage 	<ul style="list-style-type: none"> Institutional autonomy and profiling reduced by top-down steering Exceeding performance targets brings no extra funding Lack of strategic dialogue Complexity of funding model High reporting burden 	<ul style="list-style-type: none"> Large regional differences seen as creating unequal funding opportunities Complexity of funding model reduces its impact on shop-floor level 	<ul style="list-style-type: none"> PBF seen as negatively affecting HEIs’ autonomy ‘Zero sum game’ character of PBF Additional administrative / reporting burden for HEIs 	<ul style="list-style-type: none"> Systems favours large research universities (at expense of smaller/specialised ones) New funding system comes with additional administrative / reporting costs for HEIs

Perf Based Funding (PBF) systems – conclusions (1)

- PBF incentivises the performance orientation in HEIs and helps reach results (but: intended results/goals differ across countries; and other factors at work)
- Raises transparency & legitimacy for the public funds allocated; supports strategic dialogue in system
- Choice of indicators, goals & weights is extremely important:
 - For institutional autonomy
 - To avoid reinforcing inequalities (due to regional setting; disciplines; size)
 - To avoid unintended behaviours (e.g., researchers' publication patterns)
- Risks strengthening competition instead of collaboration



The overall impact of PBF depends on design, context & tradition

Performance Based Funding – conclusions (2)

Performance-based funding systems can:

- increase study completion rates; reduce time-to-degree and increase study progress
- improve the teaching, learning and research quality
- enhance focus on student guidance and mentoring
- increase PhD outputs
- improve internationalisation

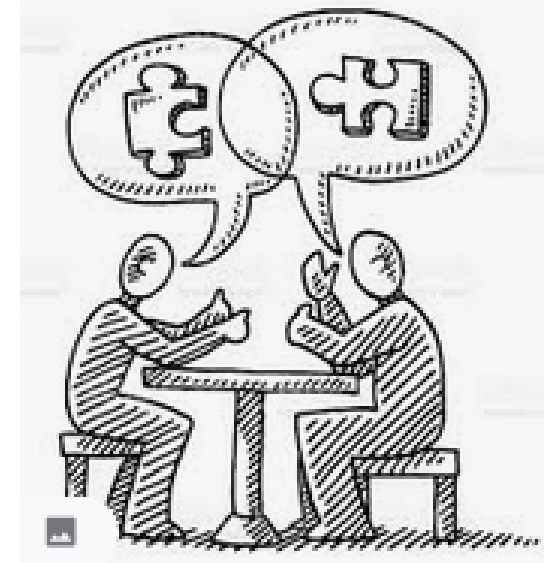


Performance Based Funding – conclusions (3)

But PBF systems can also have negative consequences

- Bibliometric indicators affecting researchers' publication patterns in certain fields (publications in English over national language outputs; publishing in less prestigious academic journals)
- Some HEIs experiencing disadvantage due to size, regional location, and/or disciplinary profile/specialisation
- Poor fit between performance indicators and missions of HEIs (but: performance agreements!)
- Performance criteria negatively affecting institutional autonomy
- Administrative burden for institutions (due to reporting requirements & complexity of system)

Towards dialogue-based funding systems: the rise of Performance Agreements



Rationale:

- to improve performance (quality, student/study success, research output, access, efficiency, innovation, ...)
- support the strengthening of HEIs' institutional profiles: differentiation
- encourage strategic dialogue between HEIs and funding authorities / Ministries
- foster accountability & transparency about the HEI's achievements

Goals:

- The most frequent education objectives in performance agreements are:
 - addressing student demands and labour market needs, internationalisation, encouraging diversity and study success
- The most frequent research objectives are:
 - the generation of competitive research revenues, internationalisation, excellence in research

Summing up

- Diversification of funding sources
- Performance elements introduced in core funding
 - Example: in the United Kingdom, the ratings produced in periodic national research evaluations drive part of the core funds of the university (*Research Excellence Framework*)
 - Can work well, but devil is in detail
- Competition to encourage quality & efficiency
 - Beware: Matthew effect
- Rise of project funding & introduction of excellence funding, to achieve particular types of results
- Complementarities between core funding and other funds
- Concentration & Selectivity (partly as result of increased competition)



See also:
OECD (2020),
*Resourcing Higher
Education*

REF 2021: Quality ratings hit new high in expanded assessment

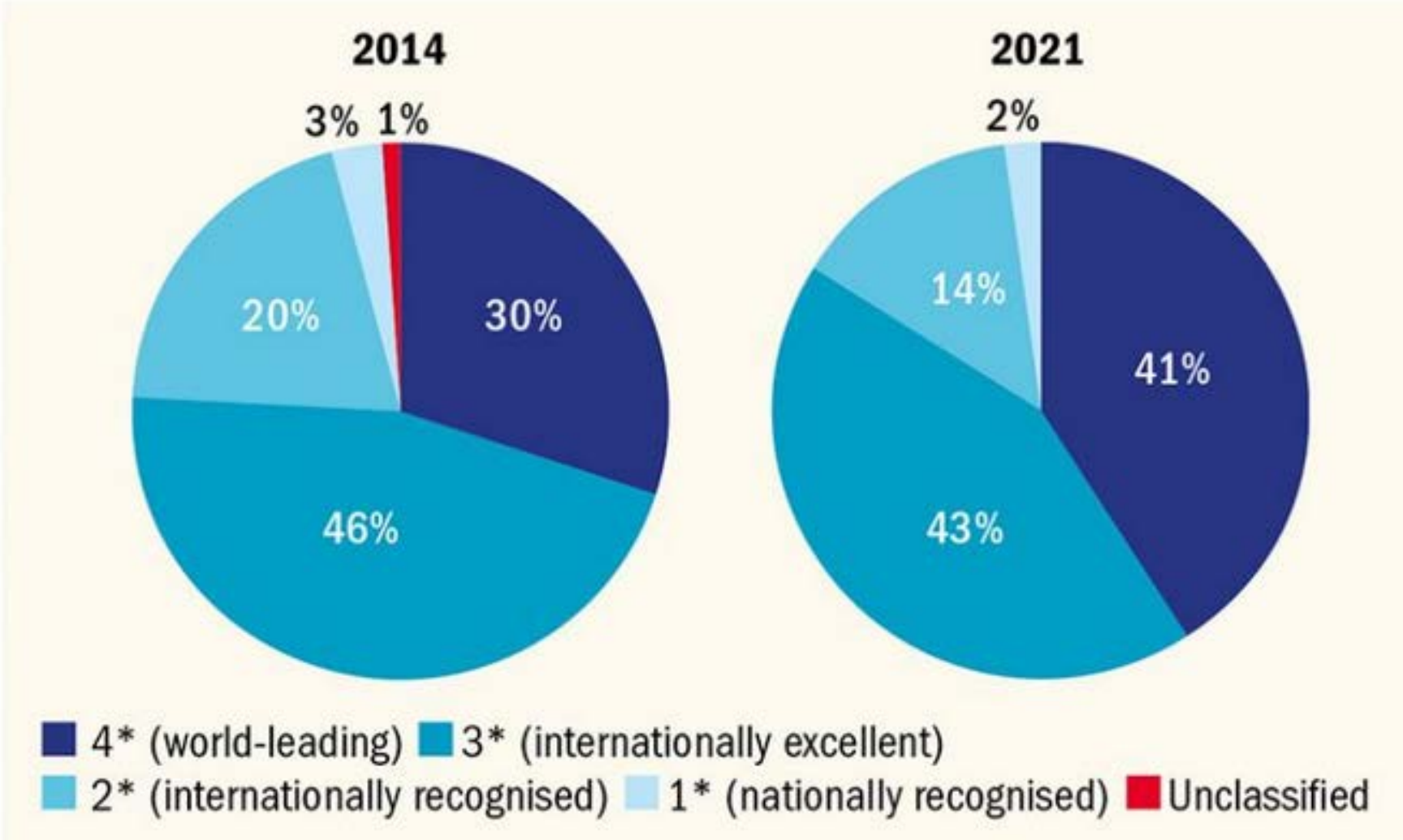


Four in five outputs judged to be either 'world-leading' or 'internationally excellent'

May 12, 2022

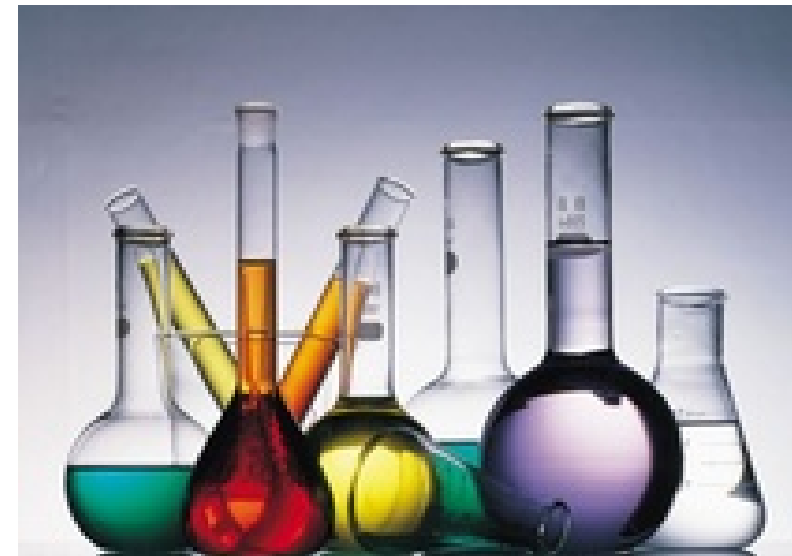
Jack Grove

Outputs in REF 2014 and 2021



Designing Funding mechanisms: a mix of ingredients

1. stable, core institutional funding ensuring scientific autonomy and a broad coverage of disciplines
2. a competitive element, providing *ex post* rewards for good performance (Performance-Based core funds for institutions): backward looking
3. an ‘innovation’-oriented component, to pre-finance new initiatives: forward-looking
 - for example, the competitive *ex ante* project funding by research councils of research in priority areas of strategic importance for economy and society



See also: Ziegele et al. (2021)

Recommendations on PBF

- PBF: handle with care:
 - goals
 - metrics
 - share tied to performance
- Co-design with sector
 - room for reflecting & respecting individual institutions' profile, ambitions & autonomy
- A balancing act ...
 - Access; Quality; Efficiency; Excellence; Relevance;
 - Diversity; Innovation; Internationalisation;
 - Regional impact; Entrepreneurship; Sustainability



Policy recommendations on Performance-based funding

1. Before implementing or reforming a PBF system, a government should set out the broad goals it aims to achieve with PBF
2. Performance-based funding systems need to be based on smart performance measurement systems
3. PBF systems require a co-design with the HE sector to increase their effectiveness
4. Funding authorities should be careful tying a relatively high share of core funding to measures of performance
5. HEIs should have some degree of choice and flexibility within the PBF system
6. Performance-based funding is best established in the context of increasing (i.e. extra) HE funding

HANDBOOK OF PUBLIC RESEARCH FUNDING

The first comprehensive handbook on theory and practice of public research funding.

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A bit of further reading...

Lepori B., Jongbloed B., & Hicks D. (2023).
Handbook of Public Research Funding.
Edward Elgar Publishing Ltd., Cheltenham.

chapter preprints at:

<https://www.projectfundinghandbook.com/>



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Thank you !

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