What levers does government have to manage university performance?

- External, competitive funding, eg from a research council
- Ratio between external and institutional research funding
- Allocating some institutional funding via a Performance-based Research Funding System (PRFS)
- Overall investment in higher education research
- Reforms to university governance and leadership
- Academic careers
- Internationalisation
Publication performance in crude international comparison – what are the drivers?

Figure 3.3. Trend of mean citation rate between 1990 and 2011 for fifteen of the currently most highly cited countries according to figure 1.
What is a PRFS?

- A two-part machine
  - An assessment or evaluation process
  - A funding formula that uses the assessment as a guide to allocating institutional funding for research

- More or less three generations of PRFS. The first two are only interested in scholarly performance
  - First generation: peer review
  - Second generation: metrics
  - Third generation: superposition of innovation and impact issues in the assessment process
Why countries say they use Performance-Based Research Funding Systems

- To enhance the quality of research and the country’s research competitiveness
- To steer behaviour in order to tackle specific failures in the research system
- To strengthen accountability
- To provide strategic information for research strategy at institutional and/or national level
This is what the funding system looks like in a systemic perspective.

- Education Ministry
- Research council
- Innovation agency
- ‘Sector’ ministries
- Potential PRFS parameters
  - Relevance funding
  - Excellence funding
  - Institutional funding

Funding flows:
- Education Ministry → Innovation agency
- Innovation agency → ‘Sector’ ministries
- Research council → Innovation agency
- ‘Sector’ ministries to Potential PRFS parameters

PRFS
# What are the design parameters for a PRFS?

<table>
<thead>
<tr>
<th>Key design parameter</th>
<th>Variations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model used for the assessment of research quality</td>
<td>• Peer review-based&lt;br&gt;• Informed peer review&lt;br&gt;• Mix of peer review &amp; bibliometrics&lt;br&gt;• Metrics-based</td>
</tr>
<tr>
<td>Scope of research activity included</td>
<td>• Research&lt;br&gt;• Innovation&lt;br&gt;• Societal relevance</td>
</tr>
<tr>
<td>Type of indicators</td>
<td>• Output indicators&lt;br&gt;• External funding indicators&lt;br&gt;• Systemic indicators&lt;br&gt;• Outcome/impact indicators</td>
</tr>
<tr>
<td>Granularity</td>
<td>• Units of analysis (grouping of scientific disciplines)&lt;br&gt;• Inclusion of individual staff (inclusive/exclusive)</td>
</tr>
<tr>
<td>Periodicity</td>
<td>• Annual&lt;br&gt;• Longer time frames</td>
</tr>
</tbody>
</table>
What models are used?
Example: Building up from the fundamental unit of assessment, the Research Unit
Overview of a potential funding system

Entry criteria → Process → Funding

Research Units → Assessment → PRFS

Agreement → Performance Agreement → Block Grant

Automatic on renewal
This one is based on peer judgements, not calculation

- **Peer judgements**
  - Institutional management and development potential
  - Membership of the (world) research community
  - Scientific research excellence
  - Research performance
  - Societal relevance

**Self assessment**

- Bibliometrics

**EvU/RO**

- Governance

- Policymakers
The PRFS at a more detailed level

Information

- Management & potential
- Membership of research community
- Research excellence
- Research performance
- Societal relevance

Peer review

- Star rating
- Strategic feedback

Money ‘pot’ per RO type and assessment criterion

- %
- %
- %
- %

Institutional research funding per evaluated RU

Horizon 2020 Policy Support Facility
Links from assessment to policy and institutional feedback

- Research Units
  - Fields
  - Disciplinary areas

**EvU and RO**
- Institutional research strategy
- Institutional & HR management
- Positioning at national level
- Positioning at international level
- Models of good practice

**Institutional management & development potential**
- Membership of the (world) research community
- Scientific research excellence
- Research performance
- Societal relevance

**National R&D governance bodies**
- Sectoral R&D strategy
- Strengths & weaknesses
- Needs for policy interventions
- Positioning at the international level
- Priority areas for performance contracts

**National policy makers**
- National research strategy
- Alignment with RD&I priorities
- Positioning at international level
- Needs for policy interventions

Horizon 2020 Policy Support Facility
What has the REF brought us?
Impact on research

- Some of the same weaknesses as peer review in general: under-values interdisciplinarity, promotes mainstream ‘schools’, eschews risky research
- Discourages ‘infrastructural’ research, databasing, instrumentalities
- Rewards short- rather than long-term behaviour
- Circularity in the community of ‘peers’, with the same people dominating REF panels, Research Council assessment, journal boards, etc - so REF seems to reinforce existing quality control and authority mechanisms in science
- Most of these effects are strengthened by university research managers’ risk-minimising and income-maximising strategies
Effects on researcher careers - mixed messages

- Academic literature on the REF* is overwhelmingly critical - the positive messages come from research managers
- Key impact mechanism of the REF is via researcher careers and hence human resource management
- Younger and female researchers under greater pressure from the REF than the old guys
- Increased market power of REFable researchers
- Managers’ inability to measure quality in REF terms causes use of quality proxies, not always good ones (e.g. JIFs, lists of journals ...)
- Researchers incentivised to prioritise short term productivity, and academic quality over the 3rd mission
- In the REF, institutions ‘game’; in metrics-based systems, individuals do so
Impact on universities: is there behavioural additionality?

- Universities more visibly accountable and the hand of central university management has been strengthened
- RAE/REF results have been used to inform university strategy and can drive reallocation of resources among fields
- Hence, the pattern of research development and growth in the universities is driven by REF performance
- New coordination, planning and monitoring roles have emerged
- Selective allocation of research time between staff
- Many universities have reproduced the external assessment criteria internally and organised ‘mini-RAEs’ in preparation for the HEFCE assessments
- Reduction of teaching to a secondary activity - problematic? TEF?
UK in summary

- The RAE is the ‘mother of all PRFS’; allocates most of the money
- Peer review - in more recent times ‘informed’ by bibliometrics
- Driven by massification and a need to justify cuts in the 1980s
- “A complex process whereby the Russell Group gives itself most of the money”
- Non-linear allocation formula intended to concentrate resources
- Bias against multidisciplinary, heterodox and transformational research caused by the submission process
- Stable outcomes; high correlation with performance in research council system (Do we need both funding systems?)
- Massive effects on recruitment, promotion, research management
- Arguably deleterious effects on research
- UK research elite firmly committed to the RAE/REF model rather than metrics, maintaining its control of resource allocation
Czech Republic

- Post-reform system of ‘research intentions’ as basis for funding abandoned owing to low trust and low governance capability
- ‘Coffee grinder’ 2009-11 wholly metrics based - across fields and different types of research organisation
- ‘Coffee Grinder points’ devalued by 60% 2009-11
- Included many categories of non-scholarly output - which were clearly gamed (as were some peer-reviewed publications)
- Combined with erratic allocation of state research budget, the Coffee Grinder caused instability in institutional funding
- Despite constant fiddling with the parameters, the Coffee Grinder was dropped as unfit for purpose following our Research Audit in 2012
Norway

- PRFS introduced following the university ‘quality reform’ of 2002 - at first in the universities, later (separately) in the institutes
- Simple, metrics-based, no field normalisation, includes a classification of local publication channels
- Reallocates 2% of funding - huge change for little money
- University PRFS
  - Quantity but not quality of publications has risen (cp Australia)
  - Proportion of faculty publishing has risen - especially in weaker organisations
  - Decline in monetary value of a publication
- Institutes PRFS: effects on publication volume, research management and HR but not on international income or cooperation with universities (already quite high)
Emerging conclusions

- There’s not much evidence behind the policy trend to PRFS
- Policy purposes seem rarely to be made explicit
- If you dig, you can find them
  - UK: Matthew effect
  - NO: Quality of the whole system
  - CZ: Overcoming governance failures
- PRFS are high-leverage interventions
  - Behaviour change drivers are probably career and status
  - Possible to use them without destabilising institutional funding
- Highly prone to gaming and unintended effects
- Longer-term risks include ‘normalisation’ of science and research (Kuhn), changes in cooperation behaviour and undermining academia/rest-of-society links
Thank you