Impacts of Performance-Based Research Funding Systems: A review of the concerns and the evidence

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Structure of today’s presentation

- Brief discussion of the issues to be faced
- Range of intended and unintended outcomes
- Review of the evidence
- Policy implications of findings
- Initial suggestions for further research
Assessing impact – a tricky exercise

- Distinguishing between intended and unintended consequences
- Demonstrating causality
- Distinguishing between reality and perception
- Determining whether or not outcomes are desirable
- Evidence-based rather than anecdotal
Limited evidence

- **UK Research Assessment Exercise**
  - HEFCE commissioned studies (e.g. McNay, Evaluation Associates) – *surveys and interviews*
  - Research Information Network - *survey*
  - Roberts Review – *surveys, workshops, consultation*

- **New Zealand PBRF**
  - Ministry of Education – *quantitative analyses*

- **Australia, Norway, Spain**
  - *bibliometric analysis*
Intended outcomes

*All countries:*
- Distribute funding

*Most countries:*
- Improve the quality of research
- Increase accountability for government funding

*Country-specific*
- Improve international competitiveness (Hong Kong)
- Stock-take of current strengths and weaknesses (Australia)
- Increase international visibility (Spain)
- Increase proportion of staff with doctorates (Sweden)
Unintended outcomes

- Increased publication output
- Changes in publication practices
- Pressures on staff morale
- Transfer market for academic ‘stars’
- Downplay teaching role
- Pressures on discipline mix
- Hindering interdisciplinary, “blue sky”, collaborative research
- Biased against local/national and applied research
- Improved information management systems
Impact on funding

- PBRFs achieve their primary goal as a funding mechanism
- NZ government has undertaken the most detailed analysis of impact at the institutional level
- Analysis of UK RAE outcomes often carried out in the press (THES, Guardian)
  - *led to increased concentration of funding – until the 2008 exercise*

Given the ready availability of data, it is surprising more governments have not undertaken a NZ-style analysis.
Impact on quality

- A belief that PRFSs have led to an improvement in the quality of research in a number of countries (e.g. UK)
- A concentration on productivity has led to a decline in relative performance by Australia

Bibliometric analyses can shed light on changes in performance in the sciences … but must be restricted to university data, and must investigate alternative explanations
Improved quality - UK

Source: Adams & Gurney 2010
Impact on productivity

- Many countries claim an increased publication output as a result of PRFSs

A number of bibliometric studies of publication trends have been undertaken e.g. for the UK, Australia, Spain and Norway
Increased productivity - Australia

- Australian universities' share of world publications

Key Points:
- 1993: Introduction of publications collection
- 1999: 1st review of HE funding
- 2003: Proposed introduction of metrics

Graph showing trends in Q1, Q2, Q3, and Q4 journals from 1981-2007.
Impact on choice of publication outlet

- Concern that publication practices are altered to suit the ‘best strategy’ for assessment
- Most commonly raised concern is a move to journal publications in disciplines where other outlets have traditionally been more important

A number of surveys and data-based studies have been undertaken with a focus on the RAE
Change in publication outlets from 2002 to 2008 - UK

Source: Fry et al. 2009b
Impact on staff morale

- Some PRFSs require the identification of ‘research active’ staff
  - UK, New Zealand, Hong Kong
- Even when handled sensitively, the need to be selective becomes divisive

Evidence is largely anecdotal and/or survey based. Academic unions are the lobby group most active on this issue.
Impact on teaching

- Considerable concerns that role of teaching is being down-graded
- Difficulty in assessing teaching quality means it is hard to verify any claimed changes
- Most ‘evidence’ is anecdotal

An analysis of teaching contracts over time may provide some insight; particularly if combined with detailed surveys of both academics and HR administrators
Impact on discipline mix

- Different PRFSs lead to concerns about (dis)advantages flowing to particular discipline groups
  - *In quantitative studies, HASS disciplines believed to be at a disadvantage*
  - *In qualitative studies, a concern that disciplines with a newly emerging research culture are disadvantaged*
  - *In NZ there are concerns that the PBRF discipline weightings were too influential on funding outcomes*

Evidence is largely anecdotal, though time-series bibliometric analyses could provide insight
Impact on type of research

- Concern that certain types of research are disadvantaged:
  - *Interdisciplinary research*
  - “Blue skies” research
  - *Research of local or regional significance*
  - *Applied research*

- Evidence Ltd undertook an analysis of UK RAE outcomes for HEFCE and found no sign of bias against interdisciplinary research

Evidence largely anecdotal, with some surveys undertaken in relation to the RAE
Impact on collaboration

- Concerns have been raised that PBRFs will lead to a reduction in collaboration
- To allay concerns:
  - *RAE allows all contributing authors to submit a publication for assessment*
  - *Australian ERA chose not to fractionate publication and citation counts between authors/institutions*

Evidence largely anecdotal, with some surveys undertaken in relation to RAE. Time series bibliometric analysis could provide some insight into trends
Impact on institutional management practices

PRFSs are credited with a number of management responses:

- Contributing to a significant improvement in information management systems
- Moves to introduce metrics-based systems led to establishment of institutional repositories
- Concerns about loss of researcher autonomy
- Departmental restructuring after results appear
- Strategic recruitment

Reports of management responses often appear in the popular media; some surveys of UK universities
Overt game-playing

- Universities will always seek to maximise their returns from a PRFS
- Some of the most commonly criticised practises are:
  - *Strategic recruitment just prior to PRFS*
  - ‘Salami-slicing’ publications
  - *Forming citation clubs*

Evidence is largely anecdotal. Staff data and bibliometric analysis may provide insights into some of these issues.
Policy challenges

- Being confident of causality
- Conflicting signals
- Inconsistent outcomes
- Is impact due to a specific system, or simply the existence of an assessment regime?
- Are the behavioural responses negative or positive?
- The mediating influences of parallel reward systems.
  - *Other government schemes*
  - *Reputational ranking exercises*
- Institutional versus individual responses/assessment
More evidence needed

- Are there any relevant unpublished analyses (e.g. internal government documents)?
- Are there any relevant analyses published in languages other than English?
- Setting up multi-national, multi-dimensional studies
  - Bibliometrics + surveys + in-depth sociological studies
- Applying successful analyses to additional systems
e.g. bibliometric analyses of trends in co-citation and co-authorship patterns; compare sectors/countries subject to PRFSs to those outside their influence
We know what needs to be studied … the challenge is to facilitate this happening