

Evaluating the Innovation Dividend

A Possible Framework

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OUTLINE

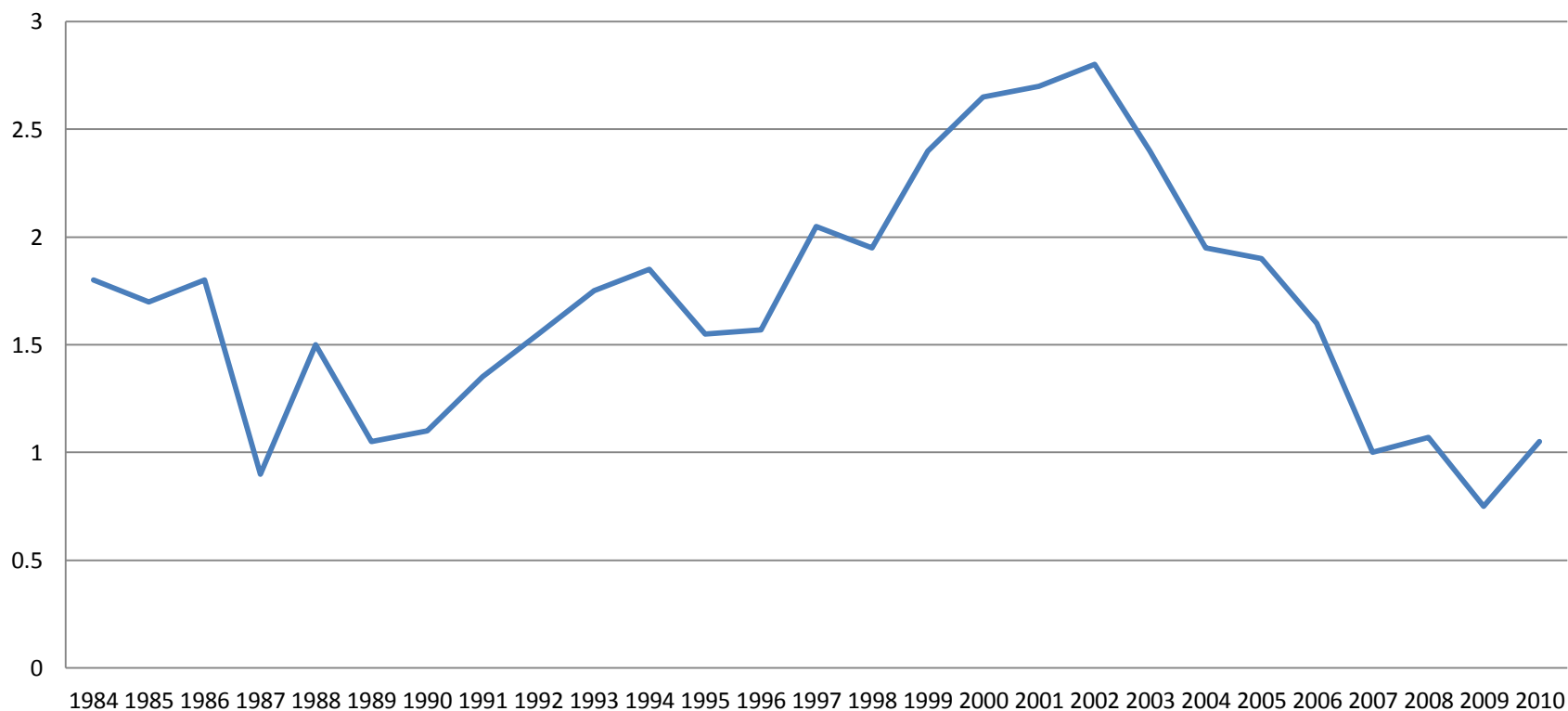
- The need to innovate and to increase the innovation dividend from the investment in research
- The need for an Excellence in Innovation (EIA) scheme
- A possible evaluation framework
- Problems, and the need for a separate scheme from ERA
- Some conclusions

THE NEED TO INNOVATE

- Australia's productivity is stagnating but its impacts are hidden by the demand for commodities.
- This demand is cyclical and the lead time for productivity improvement measures such as innovation and investment is long.
- Lifting Australia's productivity can be a major dividend from innovation.
- Innovation has many guises but much technological and social innovation is underpinned by research.
- There is an urgent need to increase the innovation dividend from the investment being made in research.

Australia's Productivity Challenge

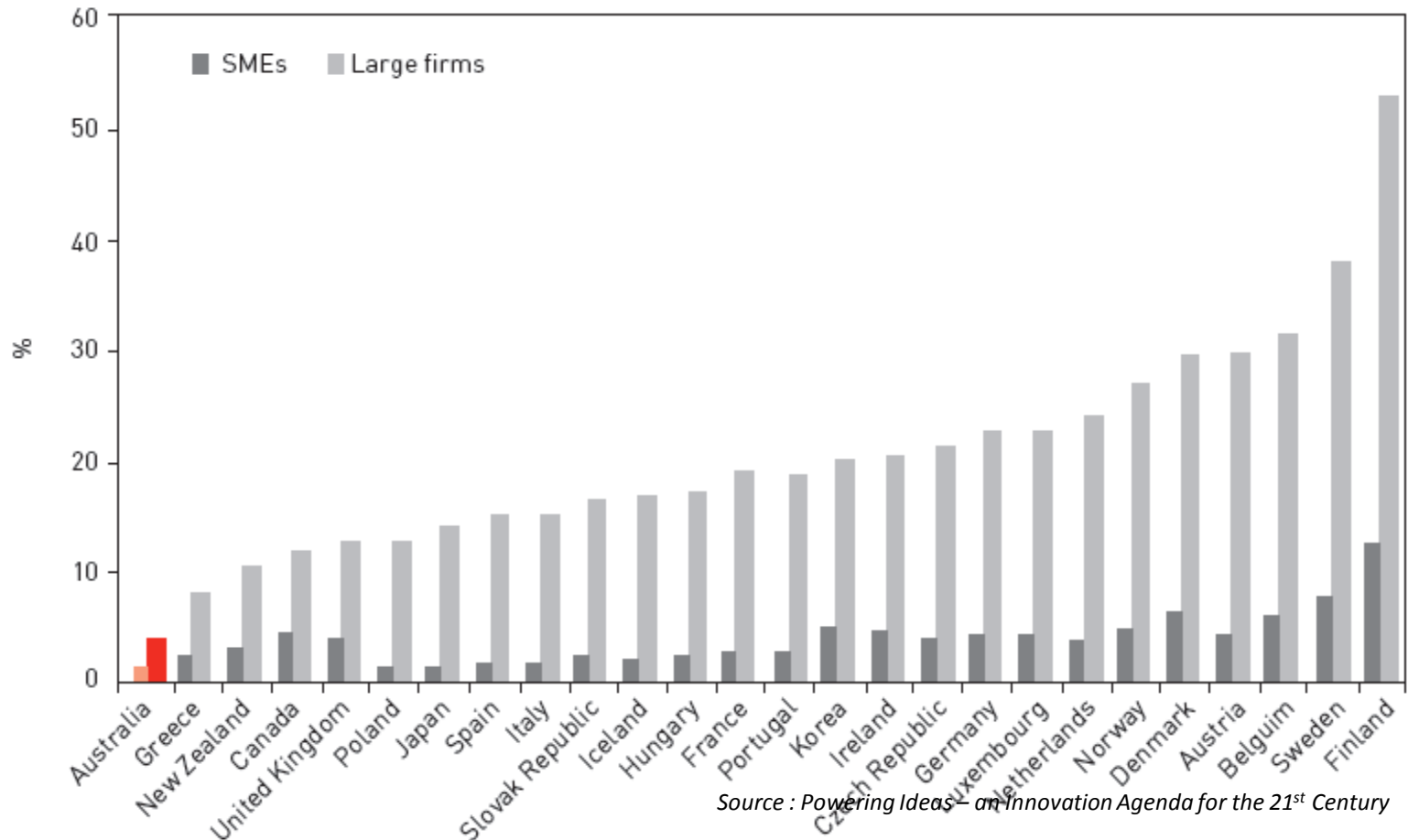
Australian Labour Productivity (ABS)
% per annum (5 year rolling average)



COLLABORATING TO INNOVATE

- Collaboration between universities and users of research is low in international comparisons.
- What arrangements exist are often serendipitous and based on the ‘linear’ model of R,D&D whereas higher quality, more complex collaborative efforts with continual feed backs are more effective.
- An applied research quality evaluation system enjoying parity of esteem with academic research would reduce the ‘pressure to publish’ psychology and foster more and better collaboration.

Firms collaborating in innovation with higher education institutions, 2002-04



Source : Powering Ideas – an Innovation Agenda for the 21st Century

BENEFITS FROM AN EIA

- A quality assessment scheme linked to the innovation dividend has many benefits –
 - Allows potential users to identify the optimum collaborators so providing expanded research funds.
 - Staff will have a greater incentive to relate to external bodies potentially providing them improved rewards.
 - Undergraduate teaching will benefit through being delivered by faculty more in tune with current workplace requirements as the recruitment bias towards ‘publication potential’ will diminish.

A POSSIBLE FRAMEWORK FOR EVALUATING APPLIED RESEARCH

- ATSE has proposed a framework for applied research quality assessment developed independently of the UK system but having some similar characteristics.
- It aims at overcoming the traditional problems with assessing impact
 - time scales,
 - accommodating social sciences and humanities,
 - measurement parameters etc.
- ATSE believes a separate, parallel system for impact would be preferred to including it as a weighted component in the ERA.

EVALUATING THE INNOVATION DIVIDEND

- Ideally evaluation would mimic the ERA processes as far as possible, using the same eight discipline clusters, the same four- and two-digit FoRs and the same Units of Evaluation.
- Some modification might be needed, particularly to accommodate interdisciplinary research which can be disadvantaged under the ERA.
- Research Application Evaluation Committees would be established for each discipline cluster which would ideally include –
 - representatives from the corresponding ERA REC
 - experienced, internationally recognised practitioners in the field and
 - prominent users of the research outputs of the cluster.

EVALUATING THE INNOVATION DIVIDEND cont'd

- Submissions would be made by institutions in the same way as under the ERA
- Format of the submission would describe
 - the work done, including the research approach as this needs to be rigorous in a quality assessment,
 - its uptake both achieved and potential,
 - the researchers involved,
 - its funding sources and quantum, and
 - a self assessment of its value assessed under one or more categories

EVALUATION CATEGORIES

- Plant breeder's rights, patents, registered designs
- Research commercialisation income
- Cost savings arising in the hands of the user
- Incremental revenue arising through application
- Additional investment made as a result of the research
- Medical and health benefits
- Resultant changes in environmental management practices
- Resultant government policy changes made
- Practice changes adopted by users
- Other benefits arising not covered elsewhere

EVALUATION PROCESS

- The submission would nominate which categories the research is to be considered under
 - frequently there can be impacts in more than one area so a weighting by category would be desirable
- All submissions require an auditable ‘Statement of Uptake’ from a third party user of the research being evaluated.
- Greater value will be placed on results actually achieved
 - expert opinion used for potential uptake of research where lead times are very long or the results are conditional on other occurrences (recovery from disasters, epidemics etc.)
- The rating scale would parallel the ERA scale –
 - Units of Evaluation would be defined in the same way as the ERA

DESCRIPTORS

Rating	EVIDENCE PRESENTED
5	Of outstanding research outcomes with substantial application that leads to highly significant international leadership in the relevant field
4	Of outstanding research outcomes with significant application, recognised internationally as cutting edge
3	Of high quality research outcomes with significant national application
2	Of quality outcomes with some national application
1	Of outcomes with some limited application
NA	Research has been completed too recently to be able to assess its likely application or uptake.

PROBLEMS

- Collaborative effort is encouraged but assessment of relative contributions is difficult
- What would have happened if the research had not been done?
- How much of the impact is attributed to the research?
 - rather than other factors such as investment
- Commercial confidentiality/security
- Is training of PGs an impact?
- Balancing reach with significance (spread vs depth)
- Focus will be on short term impact unless long term potential is recognised
- Commissioned research can have impact built in

BRUNEL RESEARCH IMPACT EVALUATION

SPREAD VS DEPTH

	LIMITED	ENCLOSED	PERVASIVE	GLOBAL
PROFOUND				
DEEP				
SHALLOW				
SURFACE				

THE NEED FOR A DISTINCT SCHEME

ATSE prefers a separate parallel applied research quality evaluation scheme because –

- The ERA is an excellent scheme and could be undermined by mixing objectives
- Academic ‘pecking orders’ exist
- Panels can be better structured with the required skills
- Interdisciplinary research can be better evaluated
- The type of resistance encountered within academia in the UK can be avoided

COMMENTS ON ARTICLES ON OUTCOMES OF REF IMPACT PILOTS

- “Perhaps my hostility to the (infinite stupidity of) the proposed "REF impact" project is not a block of ice, but it seems not to be melting. “
- “The impact project is only one more avatar of the assault on academic autonomy launched by every western state “
- “In any case, it is obviously worth fighting, and fighting, and fighting again to stop this abomination going through.”
- “Among hard working academics there is the slightest melting of opposition to the obvious nonsense of "impact", but just quiet (mostly) derision at the constant attempts to redefine the word in a way that gives it some useful meaning”
- ‘How do you measure the impact of a study on the life of Henry VIII?’
- “I'm now some kind of civil servant charged with 'delivering' the government's priorities,"
- “We'll end up with the in-crowd of disciplines waving their big economic potential around the bar, while the wallflowers of culture scuttle into the corner. “

CONCLUSIONS

- Australia faces a productivity challenge which will require an increase in the innovation dividend from the investment being made in university research.
- An assessment system for applied research which works in parallel to the ERA seems feasible.
- Similar initiatives are being taken internationally which will be able to inform any Australian initiative to establish applied quality measures
- An EIA needs to be underpinned by additional public (*Third Stream?*) and private funding

CONCLUSIONS (cont'd)

- Users of research outputs would value an independent evaluation of both the quality and innovation dividend delivered of the past work of researchers –
 - To identify the best group/s to collaborate with so as to confidently expand their higher education research investment
 - To arouse greater interest in collaboration, particularly amongst SMEs, NGOs, government departments etc
 - To ensure applied and interdisciplinary research enjoys parity of esteem with single discipline academic research
 - To foster a collaborative culture within universities
 - To assist under and post graduate training to align better to employment requirements
 - To allow universities to better market their research strengths