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Funding higher education research: Moving beyond ‘low-risk’ project finance

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Introduction

- **Aim**: to outline an interdisciplinary critique of global trends in the funding of higher education research
- **Method**: the critique proceeds on conceptual and ethical grounds, invoking Public Policy and Finance
- **Contribution**: a risk-oriented framework for the ‘review and evaluation’ of research funding policy

Global Trends

- A common position on research funding can be found in the Global Research Council's several **statements of principles**, variously reflected in national policies
- The GRC's principles on '**merit review**' seem prudent and benign: expert assessment, transparency, impartiality, appropriateness, confidentiality, integrity
- Broader context: public trust, accountability, appropriate expenditure "on the most worthy **projects**"

Is there a problem?

- The GRC has another, supplementary statement of principles for ‘funding scientific **breakthroughs**’
- The additional principles include: ‘freedom, flexibility and risk-taking’, diversity in funding (i.e., portfolios of approaches: e.g., fund priorities *and* non-priorities)
- The ‘project’ emphasis of **merit review** tends not to (readily) accommodate these additional principles (as expressed through *a priori* evaluation criteria)

Why not?

- **Hypothesis**: research funding policies, and the merit review procedures that embody them, use (and imply) a very restricted notion of risk
- **Secondary hypothesis**: the standard approach to research funding parallels ‘low-risk’ project finance in capital markets (e.g., sourced from investment banks)
- **Project finance**: direct funding for the delivery of agreed outcomes with ‘limited recourse’ for failure or delay

How to proceed?

- In six distinct stages
- Roughly, the talk will develop an **analogy** between research funding policy (in higher education) and the operation of well-regulated financial markets
- Analogues of some vital features in financial markets will be found to be **under-represented** in research funding policy
- Several implications follow and an **alternative** is proposed

Stage 1a: begin the analogy

- **Competitive grants**: processes for distributing funds from patrons to investigators in support of research activity (*common aim*: addressing national priorities)
- **Financial markets**: mechanisms for transferring funds from savers to borrowers in support of economic activity (*common aim*: supporting business enterprise)

Stage 1b: refine the analogy

- **Financial regulation**: legal and supervisory frameworks that help ensure market participants are competent, solvent, and viable (at the gross level)
- **Funding policies**: legal and administrative frameworks that help ensure research organisations are competent, accountable, and viable (at the gross level)

Stage 1c: assert the analogy

- Priority (**financial markets**): management of risk (i.e., reduce the chance and impact of unexpected outcomes)
- Priority (**funding policies**): management of risk (i.e., reduce the chance and impact of misdirected funds)

Stage 2a: market theory

- Price anomalies across separate markets usually dissipate through **arbitrage** activity: i.e., the simultaneous buying and selling of interchangeable (fungible) assets, or suitable derivatives, across markets
- The effect of these transactions is ‘riskless’ profit

Stage 2b: funding criteria

- An example of some competitive funding criteria (Australian Research Council)
- Prior ‘opportunity and performance’ (**lower** risk)
- Availability of ‘time and capacity’ (**lower** risk)
- ‘Before the fact’ assessment of the project’s scientific contribution (**lower** risk)
- Contribution to national priorities (reduce breadth of funding = **lower** risk)

Stage 2c: evaluation

- These merit review criteria are essentially rewarding ‘low risk’ project proposals
- Key criteria are arguably extraneous: track record (retrospective), availability of time (prospective)
- The overall goal is to procure agreed (warranted) project outcomes with minimal wastage of funds (i.e., near riskless profit) == **arbitrage** activity
- Warranting occurs through expert review and *de facto* denial of future funding if delivery of expected outcomes is frustrated

Stage 3: efficient markets

- Stable, efficient markets generally support the coexistence of participants having distinct roles (interchangeable through capability and choice)
- **Investors**, **speculators**, **hedgers**, **arbitrageurs**
- Other more restricted roles (e.g., market making, clearing, settling, supervising, regulating)
- Each of the roles has a distinct profile in relation to market operation and the management of risk

Stage 4a: elaboration

- **Arbitrage**: transacting for near riskless profit (but opportunities tend to dissipate rapidly)
- **Investment**: transacting to place capital with the prospect of an uncertain return (but capital does not circulate properly unless the overall *risk:return* ratio is tolerable)
- **Hedging**: transacting to reduce risk exposure through orthogonal positioning (e.g., buy with an option to sell 10% lower)
- **Speculation**: transacting to increase risk exposure through gearing (e.g., buy and sell options; invest loaned funds; sometimes restricted or prohibited through regulation)

Step 4b: analysis

- Each of the four roles performs essential functions (all found in well-designed, properly functioning markets)
- **Arbitrage** (price efficiency, information flow)
- **Investment** (transfer of funds, reward for taking risk)
- **Hedging** (risk reduction, capping exposure, continuity)
- **Speculation** (risk amplification, price signals, liquidity)

Stage 5a: invoke the analogy

- The policy of merit review prioritises **arbitrage**: the funding of near riskless projects
- Aspiration for **investment** (in the GRC's 'scientific breakthroughs') but with limited policy support given uncertainty over returns == misdirected funds
- Implicit awareness of **hedging** through the promotion of portfolio diversity (not emphasised in policy)
- S**peculation** (risk amplification) doesn't feature

Stage 5b: consequences

- Intolerance to uncertainty (= preferring near riskless projects) means grants rapidly communicate what is valued within the framework (**arbitrage**: information flow)
- Fear of misdirecting funds (= risk-taking) means available research funds don’t always reach the entities that can best utilise them (**investment**: transfer of funds)
- Focussing on research priorities (= risk concentration) means unexpected outcomes are potentially catastrophic (**hedging**: capping exposure through orthogonal positions)

Stage 6a: ethically

- Funding research by arbitrage or low-risk investment (= ‘low-risk’ project finance) is arguably a **distortion** of the compact between higher education and the polity (ultimate patron) == where is freedom of research?
- To heighten **fidelity** and **equity**, funding bodies should explore ways of funding research with alternative (though still valid) characteristics: e.g., ill-defined goals, uncertain benefits, disjunctive prior histories, …

Stage 6b: practically

- Greater tolerance for risk (**investment**) is needed to harness existing research capacity (ensure adequate circulation of capital = ‘savers to borrowers’)
- Greater funding of higher risk research (**speculation**) is needed to liberate existing research potential (prove adequacy, signal emergent areas = generate price signals)
- Greater appreciation of research diversity (**hedging**) is needed to regulate existing research capability (avoid ‘wipeout’ = prudential stability = continuity)

Conclusion

- To be more effective, research funding policy should be reconfigured around a **risk matrix**
- The risk matrix should incorporate different risk management approaches: risk elimination (**arbitrage**), risk-taking (**investment**), risk reduction (**hedging**), and risk amplification (**speculation**)
- Funding policy should implement a **portfolio** approach which (in aggregate) spans the entire risk matrix

Questions and comments?

Thank you

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Arbitrage
near riskless project funding (*status quo*)

Investment
risk-taking to harness research capacity

Hedging
funding orthogonal positions to reduce exposure, increase resilience

Speculation
risk amplification to signal research capability