

Economics and Finance PhDs: Publications, Productivity and Prospects

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What do universities do?

- Lofty ambition: Generators, depositories and transmitters of knowledge
- In practice: Teaching, research and service
- 40:40:20 Workload Model
- Internal and external cross-subsidies, public and private goods produced, some of which are charged for
- Difficult to untangle core activities

Complex model: Does this lead to lack of public understanding, lack of sympathy, if not outright suspicion, of universities?

Higher Education Productivity

ABS

- Experimental measures of output/productivity
- MFP = 0.5% p. a.
- Teaching: Enrolments
- Research: Grants + research degrees

What PhDs Do

- Achievements of PhDs
- Jobs of PhDs in economics and finance
- They get good academic jobs, and work in government, international agencies, business and non-profits
- Great variety of jobs



DATA SOURCE

960 PhDs

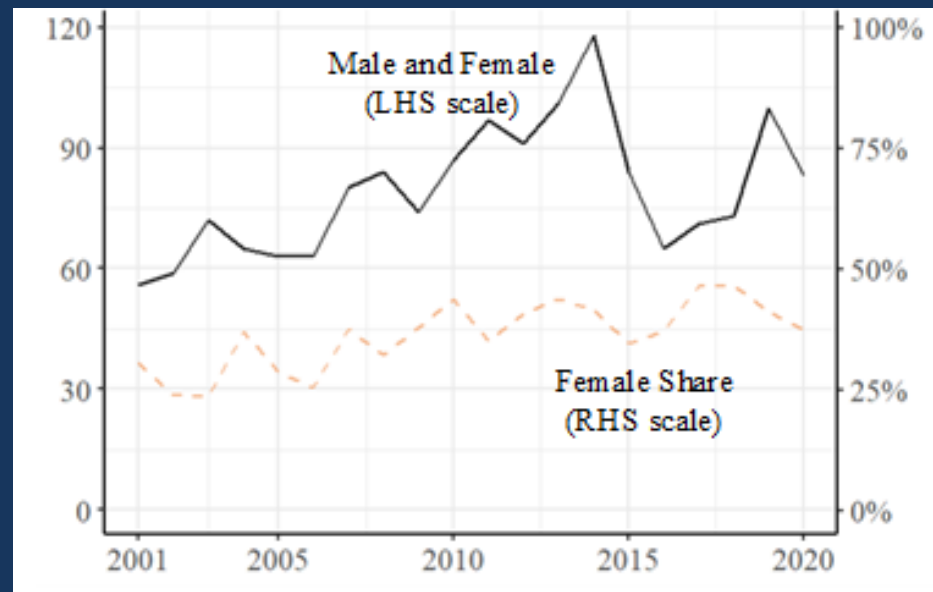


UNSW luminaries included sample

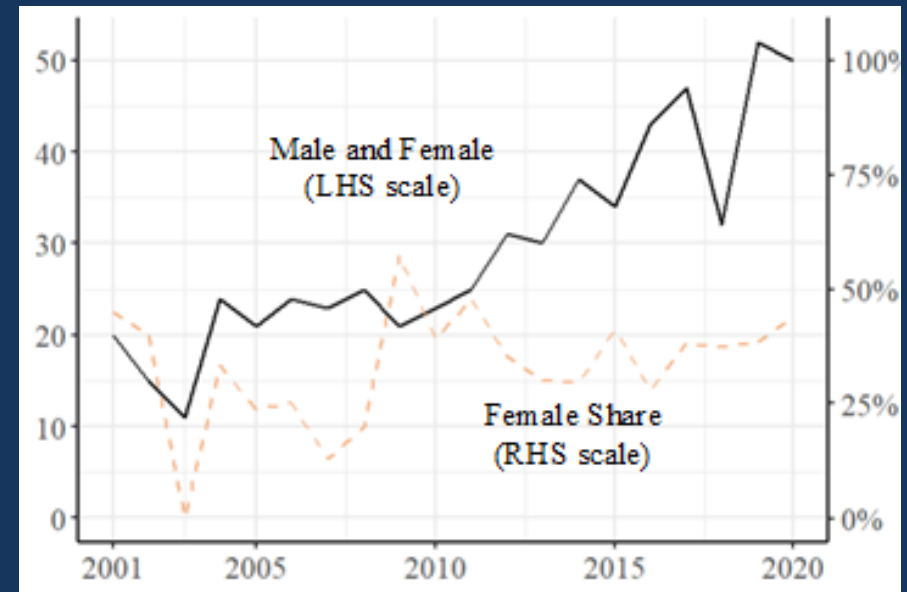
- Andrew Answorth
- Hazel Bateman
- Bruce Bradbury
- Luci Ellis
- Andrew Jackson
- Paul Jensen
- Peter Siminski
- Susan Thorp

Oz PhDs completions

Economics



Finance



Source: Department of Education, Skills and Employment

Coverage of conference

- About 30 participants in each conference
- Coverage of sample: About 25% of all economics PhDs
- Less for finance
- Are the conference data representation? Yes (as far as we can tell)

Activities of PhDs

Occupation	Number of individuals (Percent of total)
Academic	42%
Non-academic	26%
Student	5%
Not identified	27%
<hr/>	
Total number of individuals	960

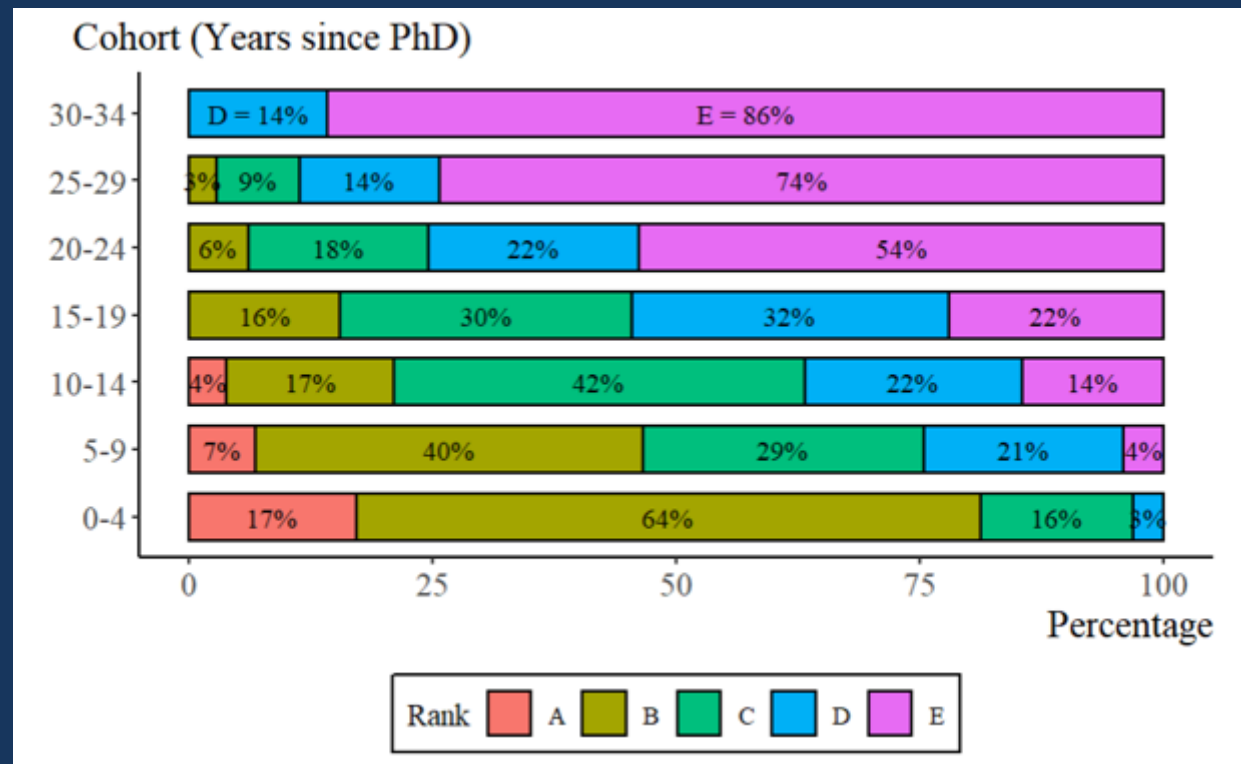
If “not identified” are “non-academic”, then

Academic	42%
Non-academic	53%
Student	5%
<hr/>	
Total	100%

Academic level and age

Academic level	Number of individuals (Percent of total)	Academic age (Years since PhD, median)
E	26%	22
D	20%	16
C	25%	11
B	24%	6
A	5%	4
All	100%	14

Academic level by cohort



2-dimensional data

1. Individuals now in academia (≈ 400)
2. Papers ($\approx 18k$)

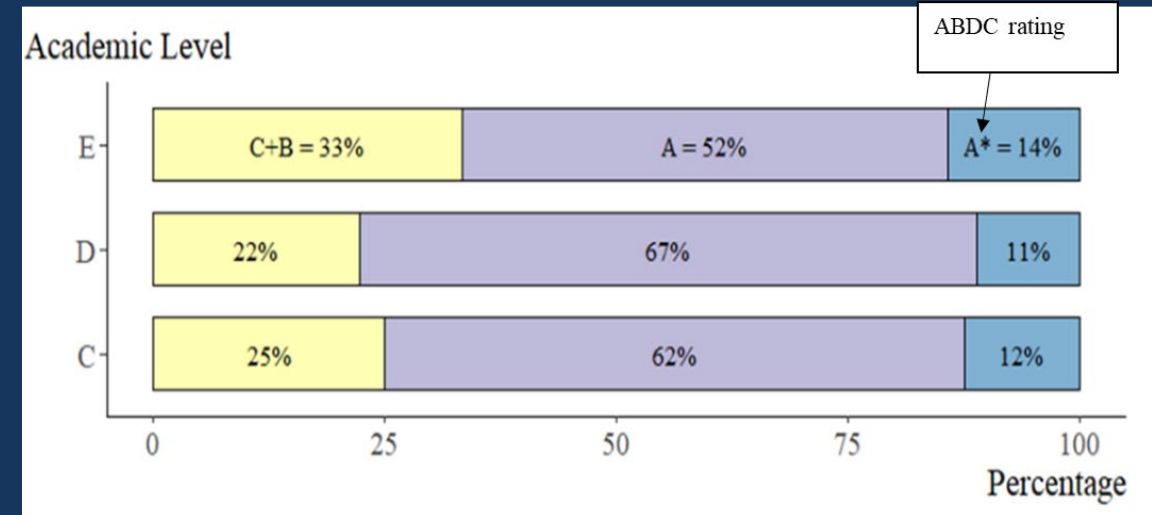
Information gaps

- Aggregate data published by Commonwealth – some issues
- Graduate Outcomes Survey
- Graduates by university not published
- Lost opportunity
- University staff lists
- We also want the non-academics, as well as those at foreign univs
- PhD Conference database not perfect, but ...

A PREVIEW

Preview, I

- Research benchmarks

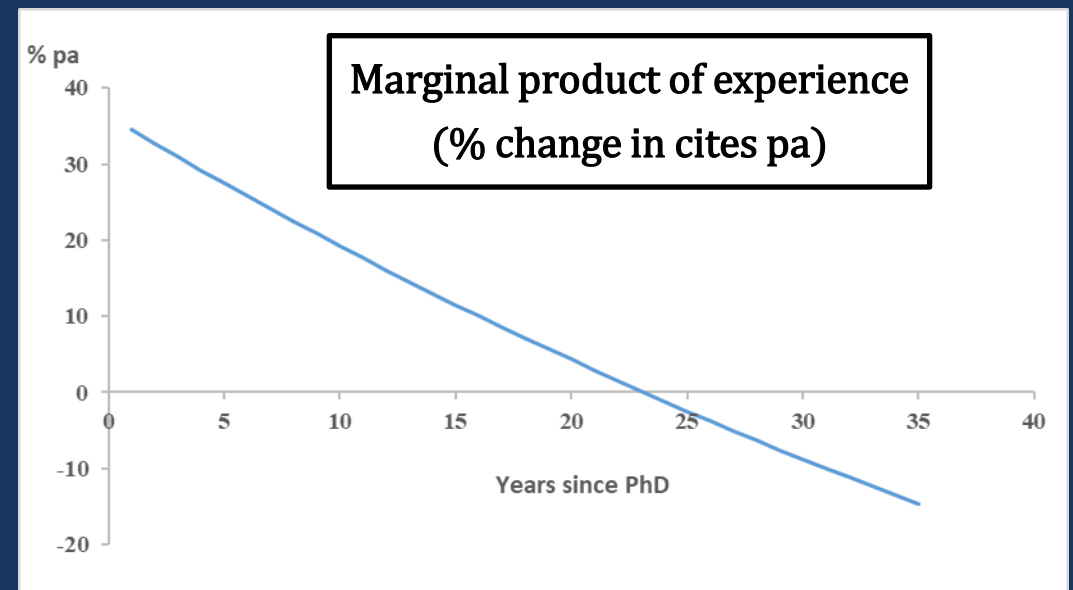


Preview, II

- Research benchmarks
- ABDC ratings
- Some issues, but papers in highly rated journals highly cited, on average

Preview, III

- Research benchmarks
- ABDC ratings
- Role of experience in research



Preview, IV

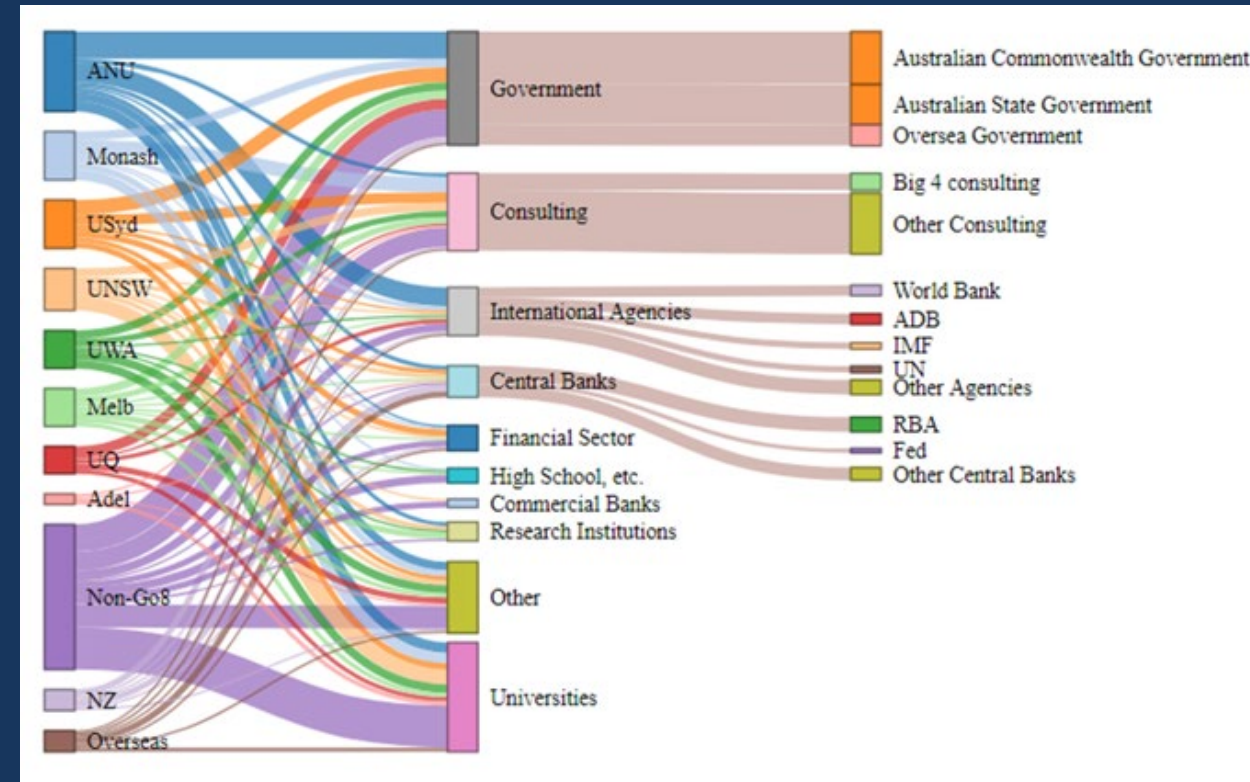
- Research benchmarks
- ABDC ratings
- Role of experience in research
- Academic marketplace

Origin and destination of academics
(Number of individuals)

PhD from	Now at										Total
	ANU	Monash	UNSW	USyd	UWA	Melb	UQ	Adel	Non-Go8	Overseas	
ANU	10	1	1	3	2		3		10	29	59
Monash		8	1		1	4	1	1	14	14	44
UNSW		3	5	3		2			15	7	35
USyd			1	6			2	1	12	12	34
UWA		1			11				6	9	27
Melb	4	2				4	1		12	13	36
UQ	1	1		1	1		5		6	6	21
Adel					1			1	8	3	13
Non-Go8	1	3	2	2	2	5	2	3	67	38	125
Overseas		1		1		2			2	4	10
Total	16	20	10	16	18	17	14	6	152	135	404

Preview, V

- Research benchmarks
- ABDC ratings
- Role of experience in research
- Academic marketplace
- Jobs outside academia



Preview, VI

- Research benchmarks
- ABDC ratings
- Role of experience in research
- Academic marketplace
- Jobs outside academia
- Gender effects
- Not much difference in productivity

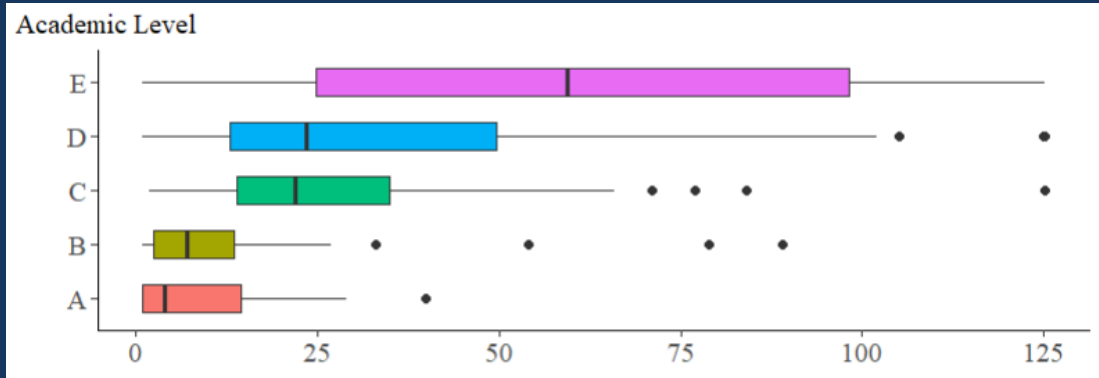
Preview, VII

- Research benchmarks
- ABDC ratings
- Role of experience in research
- Academic marketplace
- Jobs outside academia
- Gender effects
- Finance vs economics
- Similar productivity

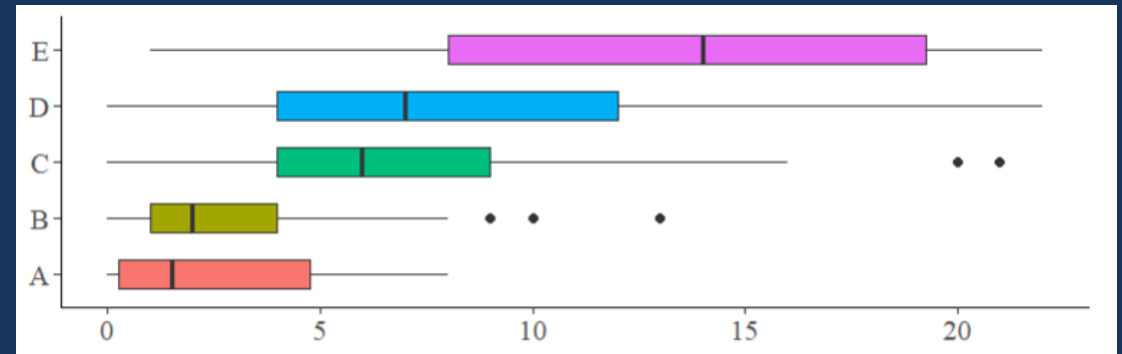
RESEARCH BENCHMARKS

Three metrics

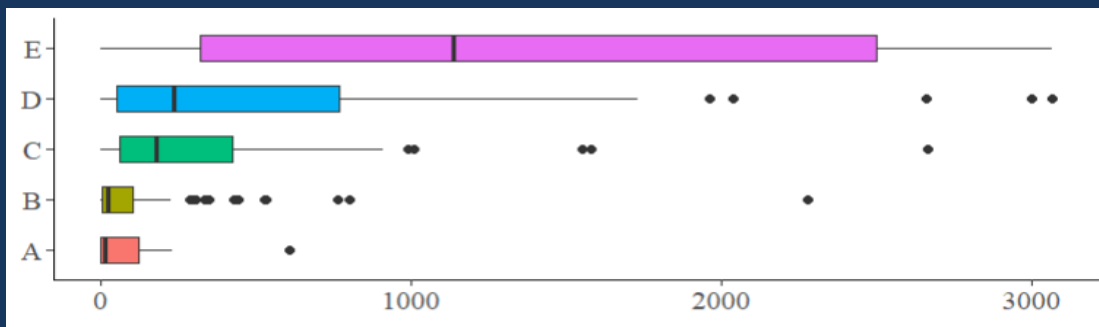
Publications



h-indexes



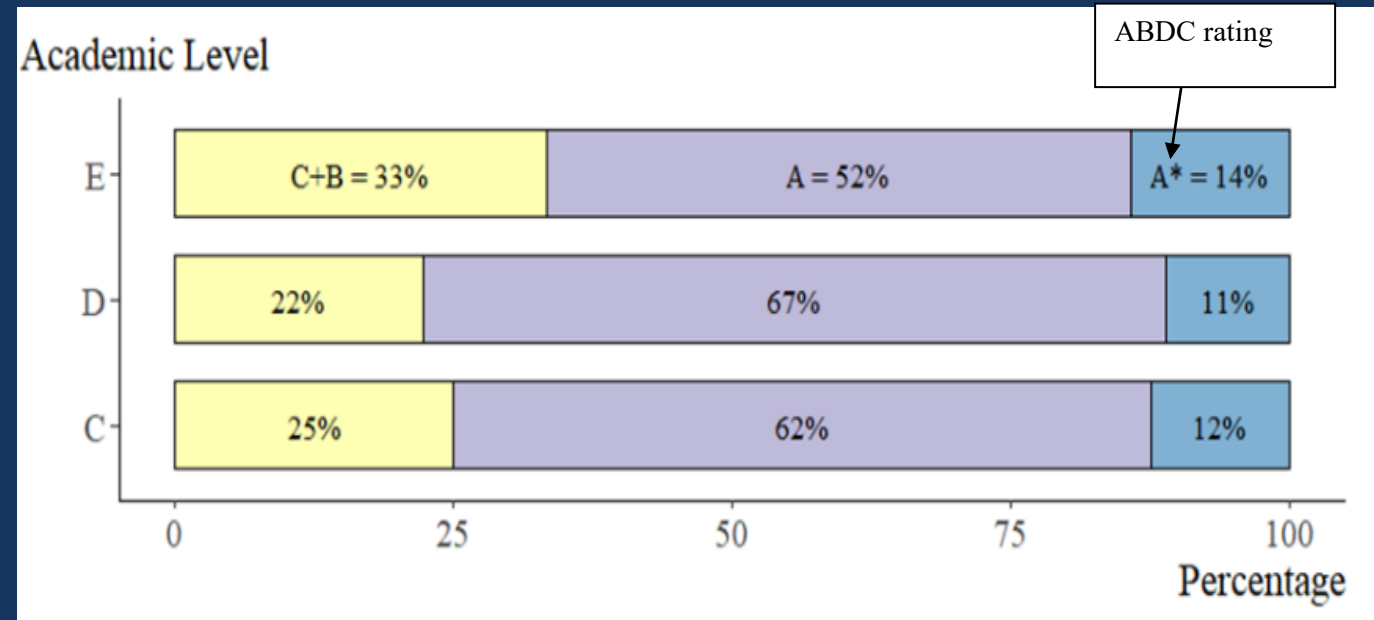
Citations



Same pattern for all 3 metrics

- High dispersion
- E's much larger than rest
- 3 groups: (i) E, (ii) C+D, (iii) A+B

Portfolio composition



Citations per paper
(Medians)

		All papers
		7

Citations per paper (Medians)					
ABDC rating					
	C	B	A	A*	All
	3	5	8	15	7

Citations per paper (Medians)						
Level	ABDC rating					All
	C	B	A	A*		
E						9
D						5
C						6
B						4
All	3	5	8	15		7

**Citations per paper
(Medians)**

Level	ABDC rating				All
	C	B	A	A*	
E	3	6	12	20	9
D	2	4	6	14	5
C	4	5	6	9	6
B	1	3	4	7	4
All	3	5	8	15	7

AUSTRALIAN BUSINESS DEANS' COUNCIL RATINGS

ABDC Journal Quality List

ABDC JOURNAL QUALITY LIST

Journal rankings in the search tool below are current to the finalisation of the most recent review, 6 December 2019, with minor textual corrections.

You can download a copy of the complete list through the search tool, or by [clicking here](#).

To download a copy of the report that accompanied the 2019 review, please [click here](#).

Role of ABDC ratings

- Prestige, promotion, ARC grants, etc.
- Publication points in workload models
- Results in quality improvement (?)
- Should ABDC be accorded such exalted status?

Problems

1. Some journals misclassified, books neglected
2. Imposes same “style/culture/standards” on everyone
3. Bad for creative research environment:
 - i. Directing research
 - ii. Micro management of academics
 - iii. Encourages “spreadsheet approach” to academic administration (?)

Citations and ratings

$$\log(1 + C_p) = \alpha + \text{ABDC rating effects (4 dummies)} + \text{vintage effects} + \varepsilon_p,$$

$$p = 1, \dots, 18,068 \text{ papers}$$

Estimates

<u>ABDC ratings</u> (Base = non-rated)			
A*	A	B	C
2.044***	1.399***	0.878***	0.515***
(0.053)	(0.043)	(0.041)	(0.060)
$N = 18,068, \quad \bar{R}^2 = 0.644$			
Notes: Standard errors, reported in parentheses, clustered at the journal and individual levels. Significance level of 1% indicated by ***.			

- Highly rated papers receive more cites
- Steep gradient

CITATIONS GENERATION

The value of research

Research complex. Difficult to evaluate quality

Advantages of citations

- Indication that research is being noticed/influential
- At least partially objective
- Signal socially useful work

Disadvantages

- All-publicity-is-good-publicity approach
- Citations can be gamed
- Citation practices differ across areas within econ and finance

- Cites increasingly important – promotions, grants
- “Citations are the coinage of reward in academia” (Blaug, 1999)
- Hamermesh (JEL, 2018)

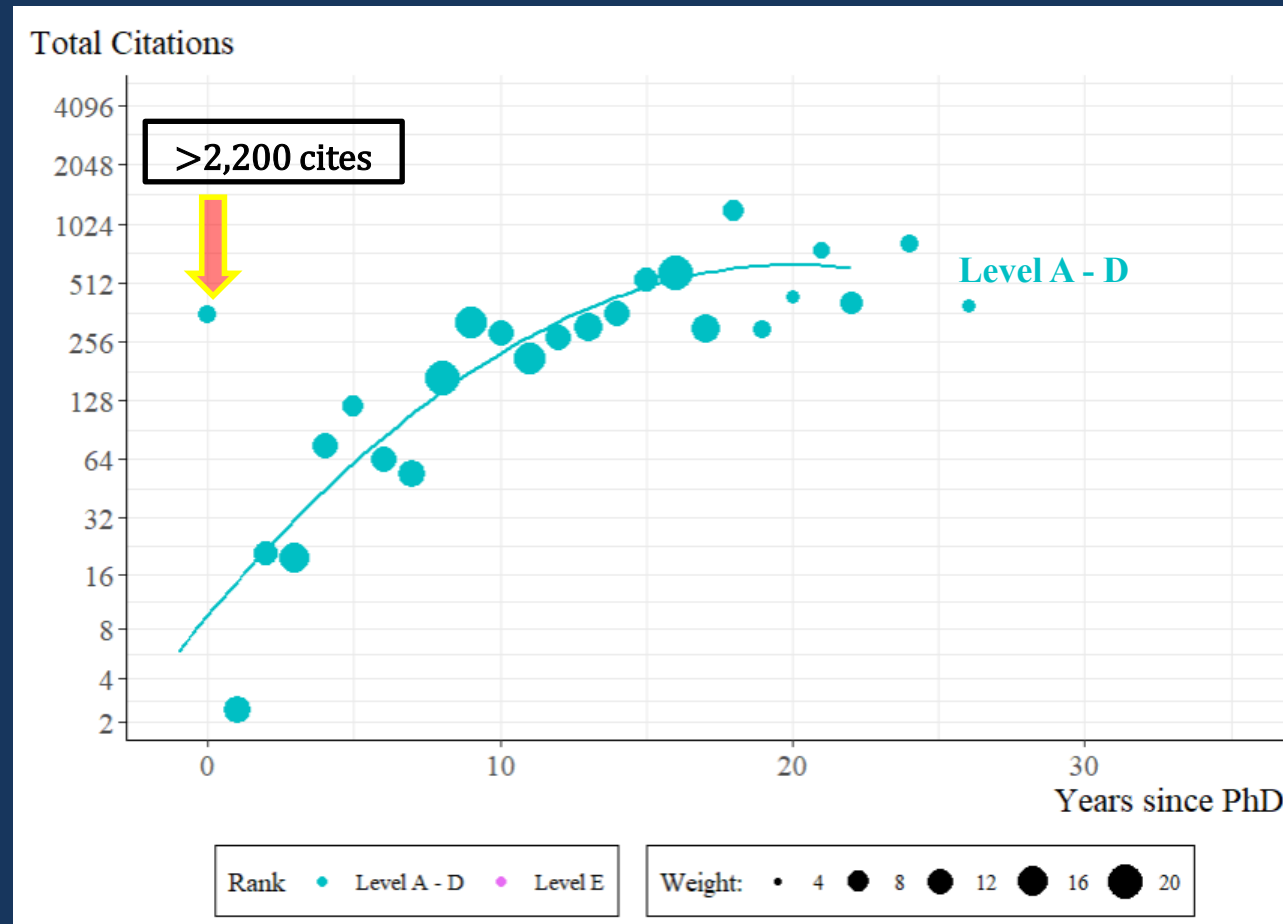
Citations production function

Citations = $f(\text{experience, education, } X)$

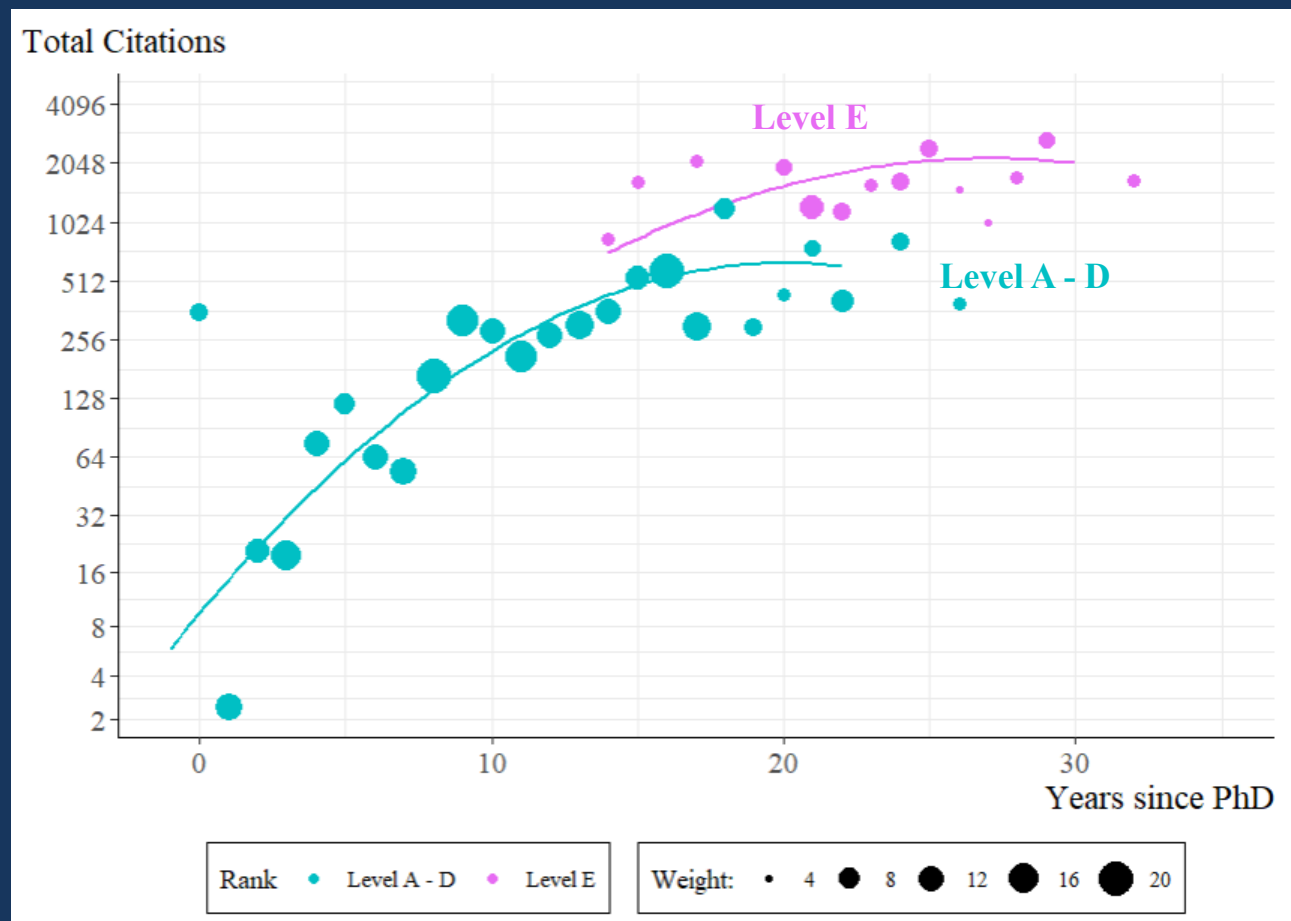
$$f_i > 0, f_{ii} < 0, f_{ij} \leq 0$$

- Experience = years after PhD
- Education = PhD (same for all)
- What's the X -factor?
 - Area/timing/luck
 - Co-authors
 - Number of papers
 - Environment
 - “Star quality”
 - Etc.
- Cross-section with $N = 398$ individuals, 5% zeros

Citations profile



Influence of professors



Cites and Experience

Independent variable	Log (1 + citations)		
	(1)		
Intercept	1.44*** (0.268)		
Experience	0.38*** (0.039)		
Experience ² (×10 ⁻³)	-0.71*** (0.125)		
<u>Academic level (base = A)</u>			
E			
D			
C			
B			
<u>PhD from (base = non-Go8)</u>			
ANU			
Monash			
UNSW			
Other Go8			
N	398		
Adj R ²	0.42		

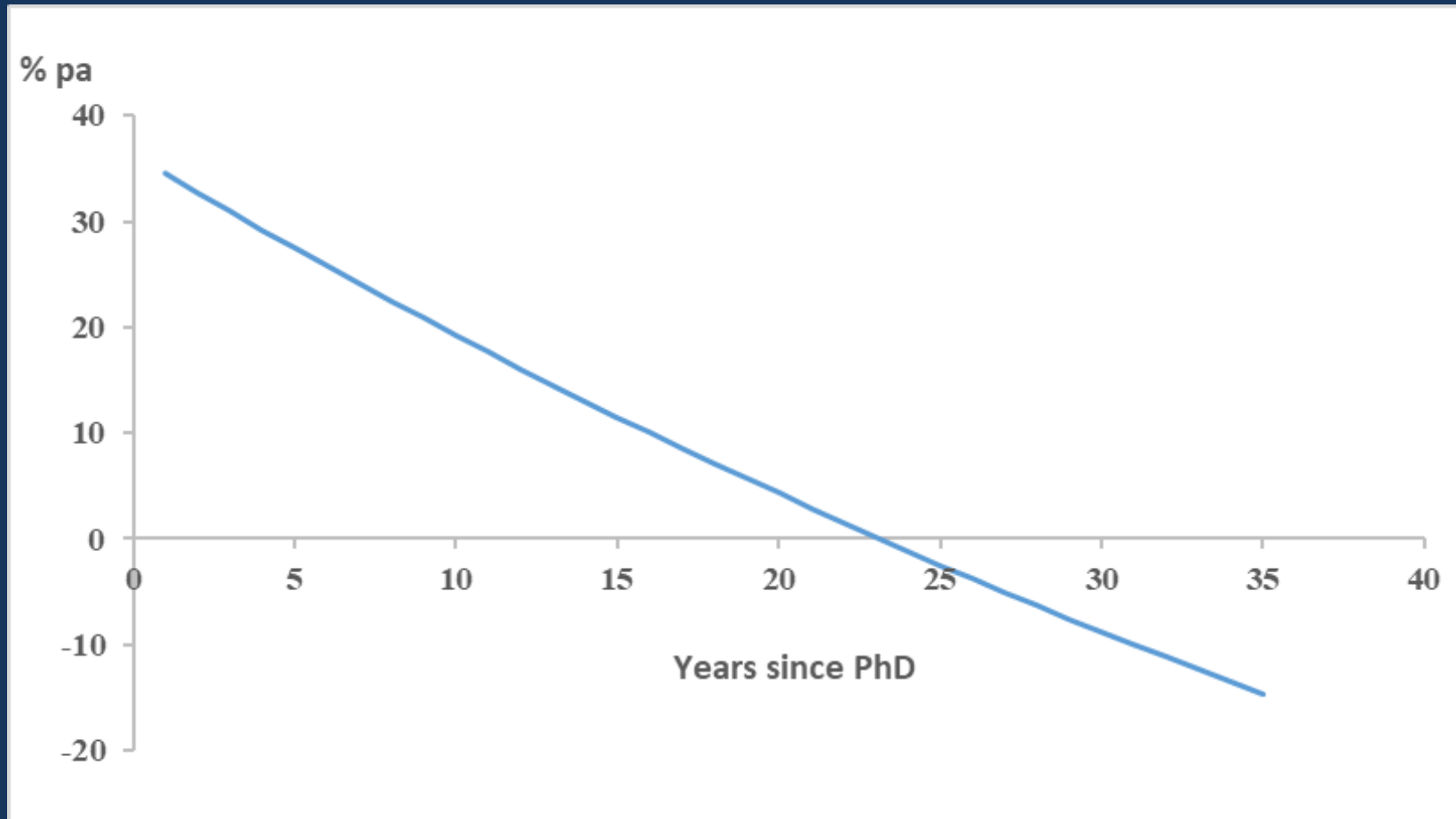
Level-E effect

Independent variable	Log (1 + citations)	
	(1)	(2)
Intercept	1.44*** (0.268)	1.45*** (0.462)
Experience	0.38*** (0.039)	0.31*** (0.042)
Experience ² ($\times 10^{-2}$)	-0.71*** (0.125)	-0.67*** (0.126)
Academic level (base = A)		
E		1.96*** (0.549)
D		0.88 (0.55)
C		0.86* (0.516)
B		-0.03 (0.498)
PhD from (base = non-Go8)		
ANU		
Monash		
UNSW		
Other Go8		
N	398	398
Adj R ²	0.42	0.48

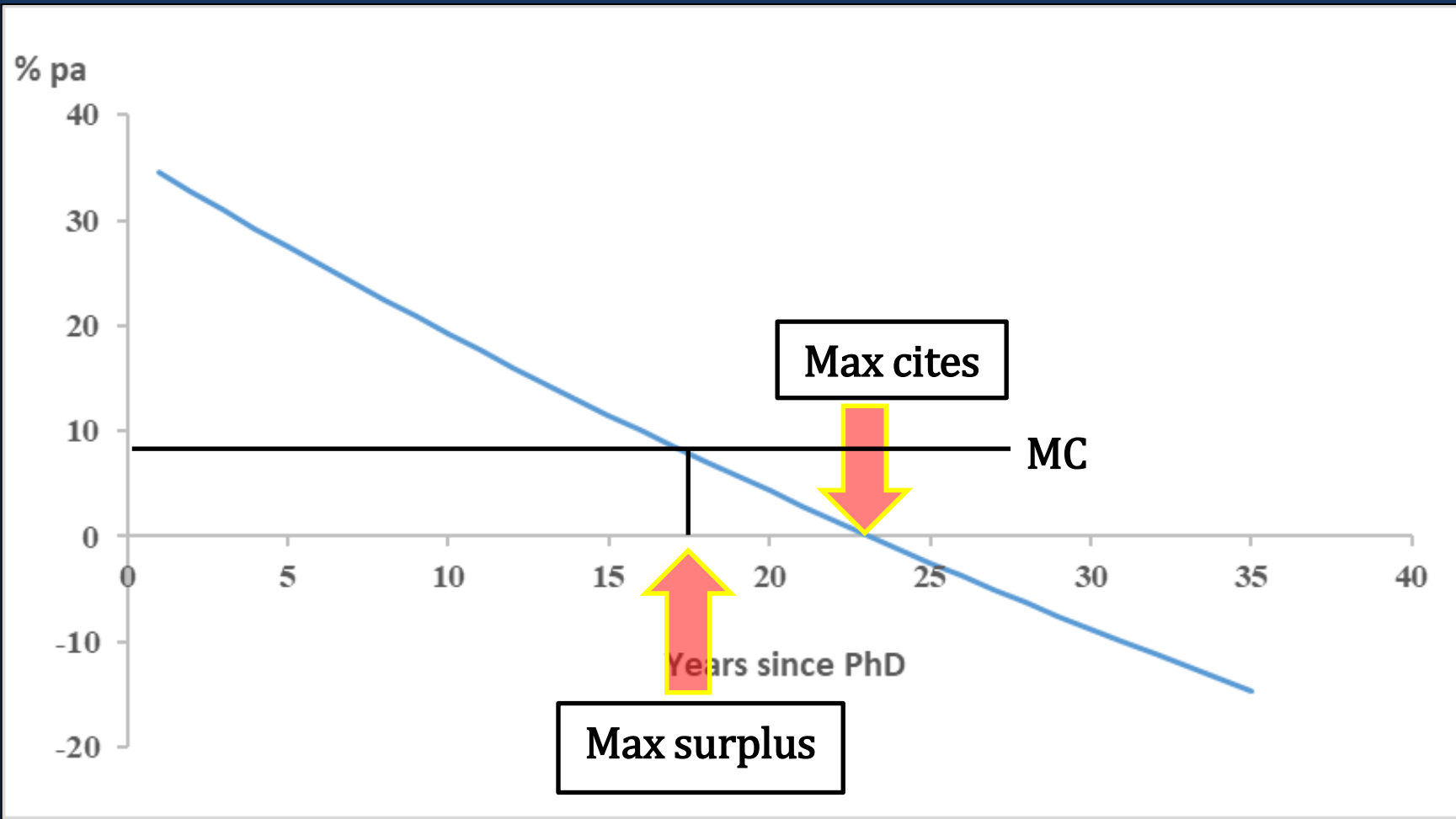
Value of the UNSW pedigree

Independent variable	Log (1 + citations)		
	(1)	(2)	(3)
Intercept	1.44*** (0.268)	1.45*** (0.462)	1.33*** (0.488)
Experience	0.38*** (0.039)	0.31*** (0.042)	0.3*** (0.042)
Experience ² ($\times 10^{-5}$)	-0.71*** (0.125)	-0.67*** (0.126)	-0.66*** (0.127)
Academic level (base = A)			
E		1.96*** (0.549)	1.99*** (0.559)
D		0.88 (0.55)	0.92* (0.558)
C		0.86* (0.516)	0.92* (0.525)
B		-0.03 (0.498)	0.06 (0.505)
PhD from (base = non-Go8)			
ANU			0.14 (0.273)
Monash			-0.28 (0.275)
UNSW			0.47* (0.259)
Other Go8			0.15 (0.199)
N	398	398	398
Adj R ²	0.42	0.48	0.48

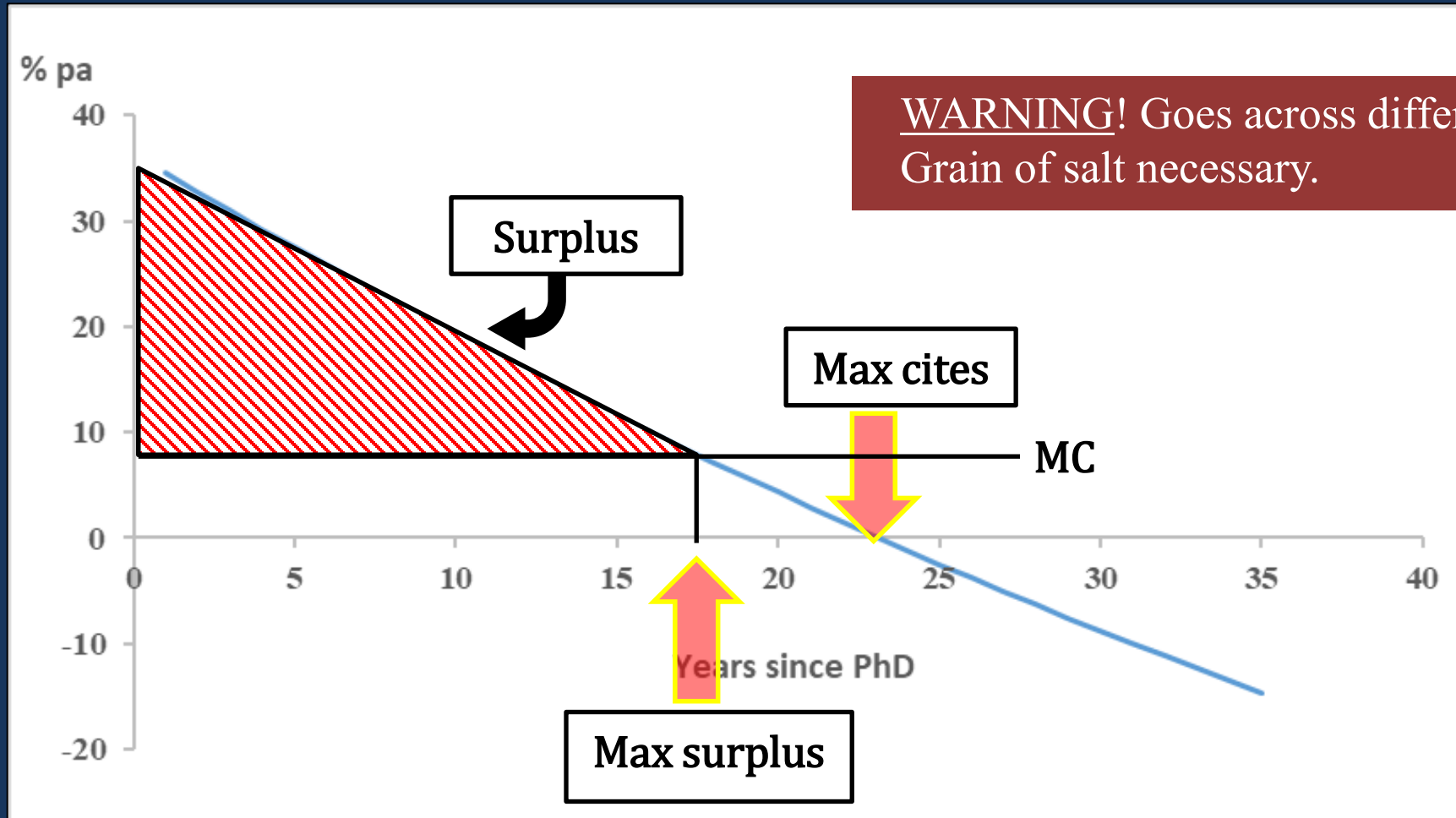
Marginal product of experience (% change in cites)



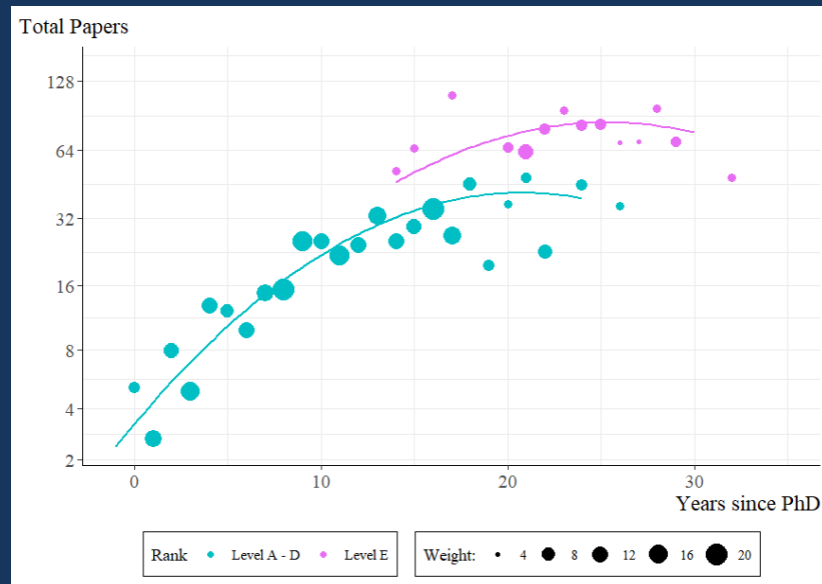
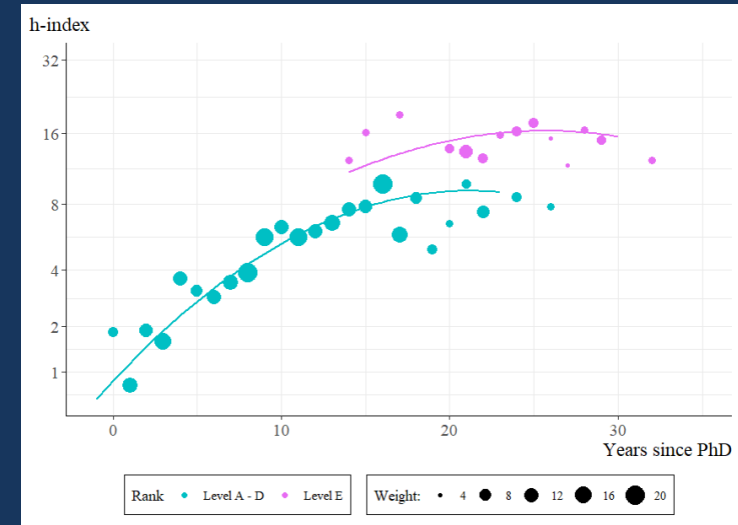
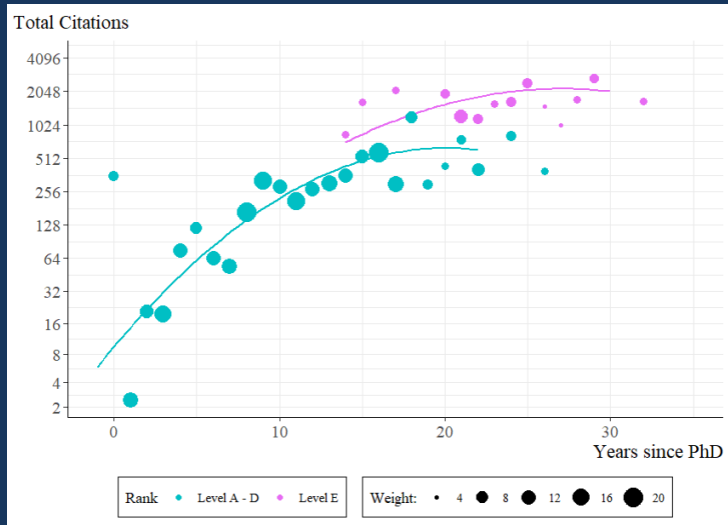
Optimisation



Stop sooner for maximum surplus



Citations, h-index and papers -- same story



THE ACADEMIC MARKET

10 × 10 network

Origin and destination of academics											
(Number of individuals)											
PhD from	Now at										Total
	ANU	Monash	UNSW	USyd	UWA	Melb	UQ	Adel	Non-Go8	Overseas	
ANU	10	1	1	3	2		3		10	29	59
Monash		8	1		1	4	1	1	14	14	44
UNSW		3	5	3		2			15	7	35
USyd			1	6			2	1	12	12	34
UWA		1			11				6	9	27
Melb	4	2				4	1		12	13	36
UQ	1	1		1	1		5		6	6	21
Adel					1			1	8	3	13
Non-Go8	1	3	2	2	2	5	2	3	67	38	125
Overseas		1		1		2			2	4	10
Total	16	20	10	16	18	17	14	6	152	135	404

Property I: Own-hires dominate

Origin and destination of academics (Number of individuals)											
PhD from	Now at										Total
	ANU	Monash	UNSW	<u>USyd</u>	UWA	<u>Melb</u>	UQ	Adel	Non-Go8	Overseas	
ANU	10	1	1	3	2		3		10	29	59
Monash		8	1		1	4	1	1	14	14	44
UNSW		3	5	3		2			15	7	35
<u>USyd</u>			1	6			2	1	12	12	34
UWA		1			11				6	9	27
<u>Melb</u>	4	2				4	1		12	13	36
UQ	1	1		1	1		5		6	6	21
Adel					1			1	8	3	13
Non-Go8	1	3	2	2	2	5	2	3	67	38	125
Overseas		1		1		2			2	4	10
Total	16	20	10	16	18	17	14	6	152	135	404

Property II: Proximity, Monash to Melbourne

Origin and destination of academics (Number of individuals)											
PhD from	Now at										Total
	ANU	Monash	UNSW	<u>USyd</u>	UWA	<u>Melb</u>	UQ	Adel	Non-Go8	Overseas	
ANU	10	1	1	3	2		3		10	29	59
Monash		8	1		1	4	1	1	14	14	44
UNSW		3	5	3		2			15	7	35
<u>USyd</u>			1	6			2	1	12	12	34
UWA		1			11				6	9	27
<u>Melb</u>	4	2				4	1		12	13	36
UQ	1	1		1	1		5		6	6	21
Adel					1			1	8	3	13
Non-Go8	1	3	2	2	2	5	2	3	67	38	125
Overseas		1		1		2			2	4	10
Total	16	20	10	16	18	17	14	6	152	135	404

Property II (cont'd): Melbourne to Monash

Origin and destination of academics											
(Number of individuals)											
PhD from	Now at										Total
	ANU	Monash	UNSW	<u>USyd</u>	UWA	<u>Melb</u>	UQ	Adel	Non-Go8	Overseas	
ANU	10	1	1	3	2		3		10	29	59
Monash		8	1		1	4	1	1	14	14	44
UNSW		3	5	3		2			15	7	35
<u>USyd</u>			1	6			2	1	12	12	34
UWA		1			11				6	9	27
<u>Melb</u>	4	2				4	1		12	13	36
UQ	1	1		1	1		5		6	6	21
Adel					1			1	8	3	13
Non-Go8	1	3	2	2	2	5	2	3	67	38	125
Overseas		1		1		2			2	4	10
Total	16	20	10	16	18	17	14	6	152	135	404

Property II (cont'd): Sydney-UNSW interactions

Origin and destination of academics											
(Number of individuals)											
PhD from	Now at										Total
	ANU	Monash	UNSW	<u>USyd</u>	UWA	<u>Melb</u>	UQ	Adel	Non-Go8	Overseas	
ANU	10	1	1	3	2		3		10	29	59
Monash		8	1		1	4	1	1	14	14	44
UNSW		3	5	3		2			15	7	35
<u>USyd</u>			1	6			2	1	12	12	34
UWA		1			11				6	9	27
<u>Melb</u>	4	2				4	1		12	13	36
UQ	1	1		1	1		5		6	6	21
Adel					1			1	8	3	13
Non-Go8	1	3	2	2	2	5	2	3	67	38	125
Overseas		1		1		2			2	4	10
Total	16	20	10	16	18	17	14	6	152	135	404

Property III: Isolation, outside Koala Triangle

Origin and destination of academics											
(Number of individuals)											
PhD from	Now at										Total
	ANU	Monash	UNSW	<u>USyd</u>	UWA	<u>Melb</u>	UQ	Adel	Non-Go8	Overseas	
ANU	10	1	1	3	2		3		10	29	59
Monash		8	1		1	4	1	1	14	14	44
UNSW		3	5	3		2			15	7	35
<u>USyd</u>			1	6			2	1	12	12	34
UWA		1			11				6	9	27
<u>Melb</u>	4	2				4	1		12	13	36
UQ	1	1		1	1		5		6	6	21
Adel					1			1	8	3	13
Non-Go8	1	3	2	2	2	5	2	3	67	38	125
Overseas		1		1		2			2	4	10
Total	16	20	10	16	18	17	14	6	152	135	404

JOBS OUTSIDE ACADEMIA

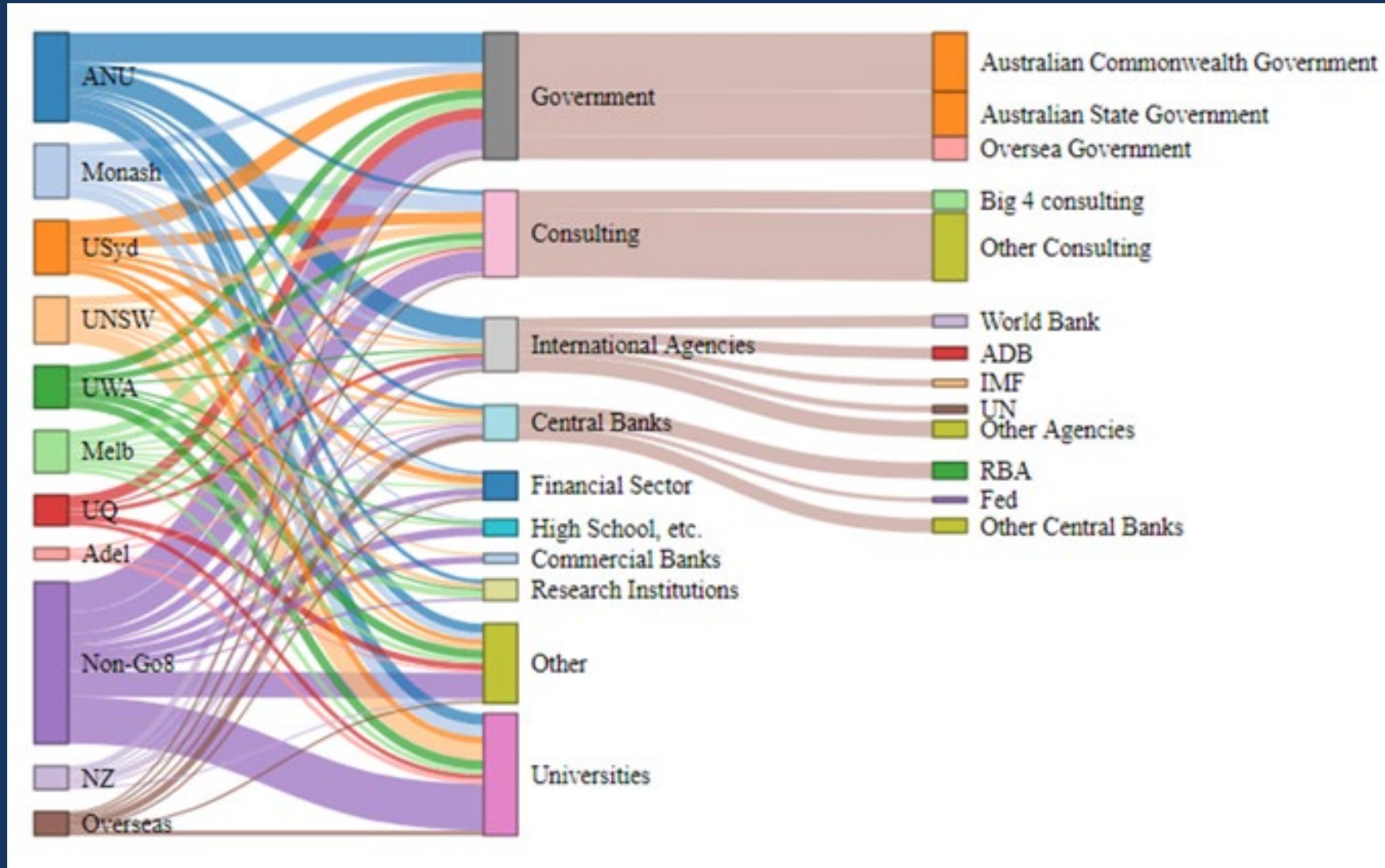
Where do they go?

Sector	Number of individuals
Government	54
Australian	25
State	19
Overseas	10
Universities	52
Consulting	37
Big 4	8
Other	29
International agencies	23
World Bank	5
Asian Development Bank	5
IMF	3
UN	3
Other	7
Central banks	15
RBA	7
Fed	2
Overseas	6
Finance sector	12
High schools, etc.	7
Research institutions	9
Commercial banks	4
Other	34
TOTAL	247

Note: "Universities" refers to other than regular teaching and research positions.

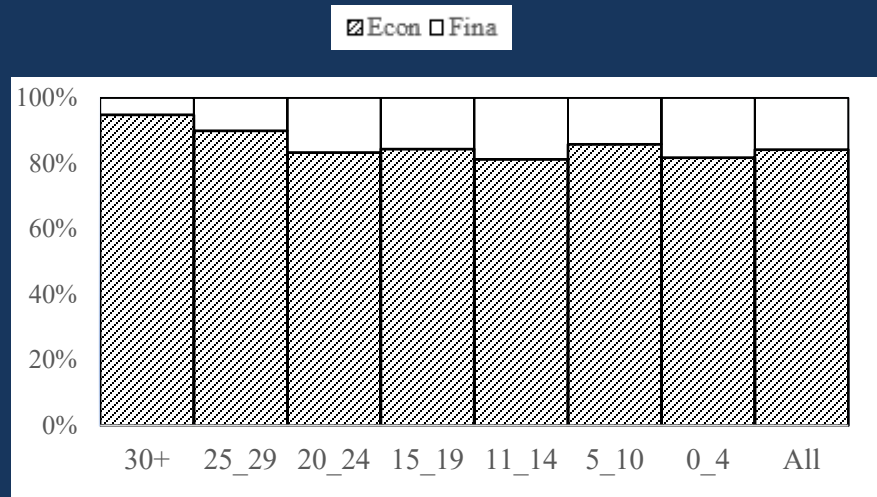
Government Agency/Location	Number of individuals
Australian Government	25
Treasury	3
Aust Bureau of Statistics	3
Productivity Commission	3
CSIRO	3
Aust Taxation Office	2
Other	11
Australian State Govts	19
Victoria	8
NSW	5
Other	6
Overseas	10
Azerbaijan	1
Botswana	1
Brazil	1
Canada	2
Mauritius	1
NZ	1
Philippines	1
UK	1
Vietnam	1
TOTAL	54

The network

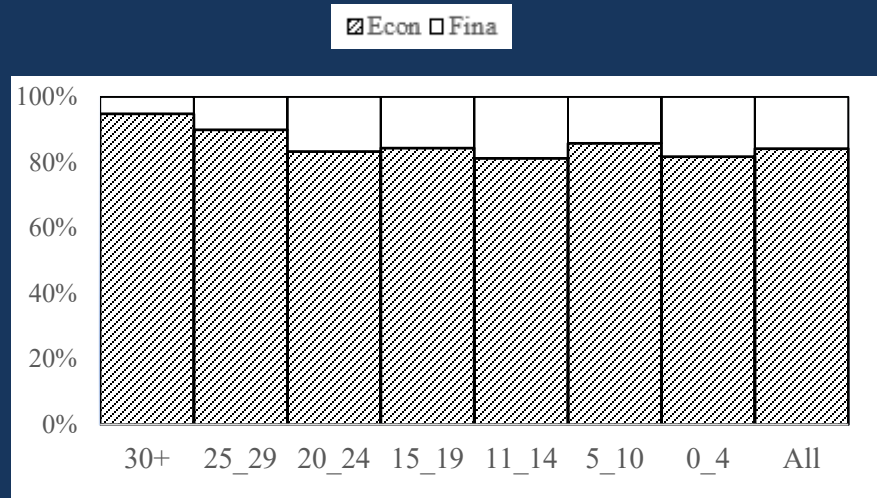


ECONOMICS vs FINANCE, MALE vs FEMALE

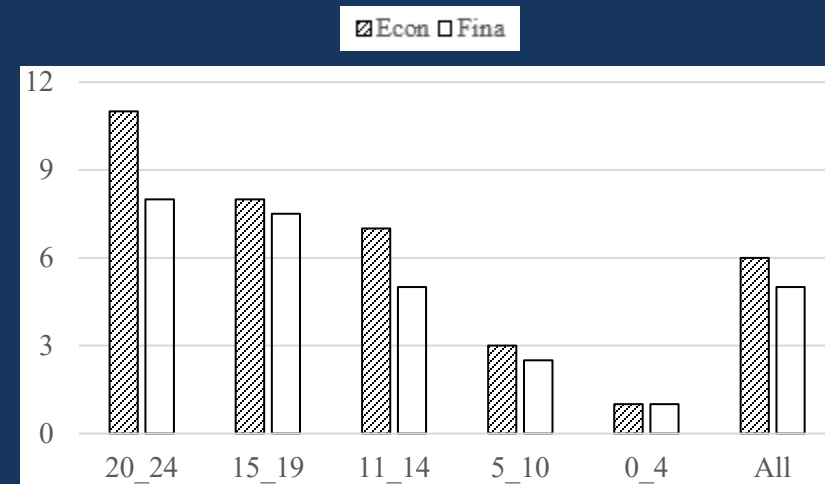
Econ/finance, shares



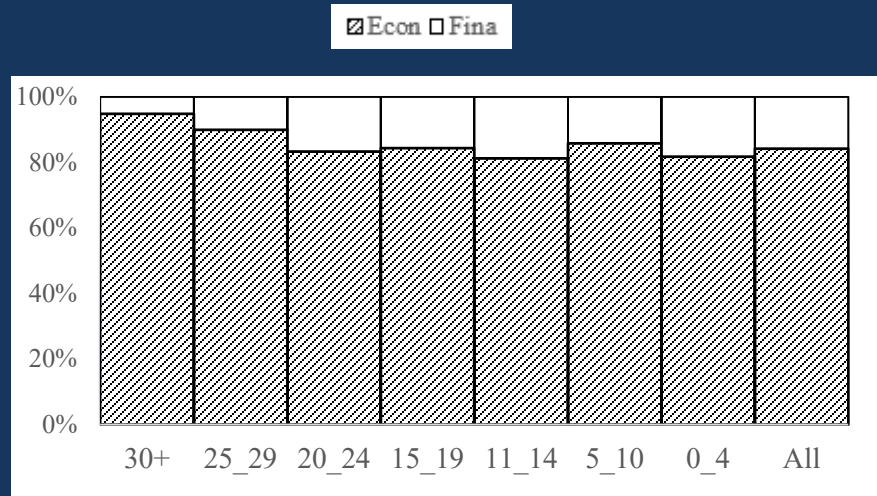
Econ/finance, shares



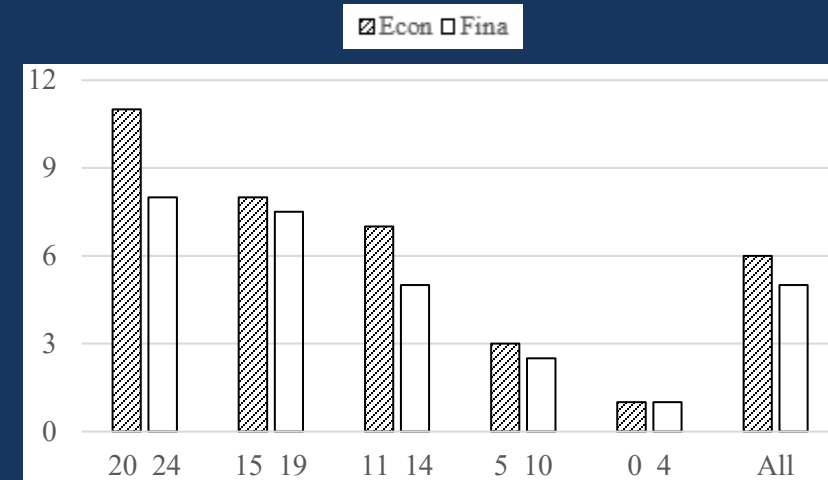
Econ/finance, h-indexes



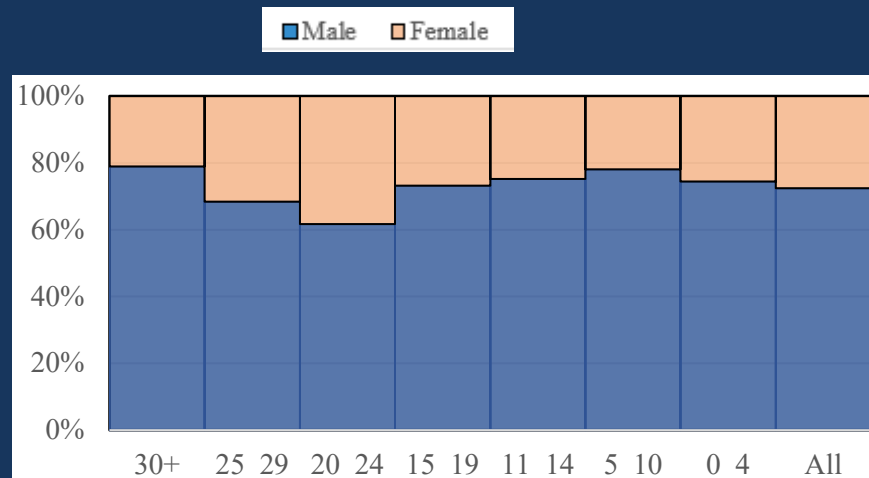
Econ/finance, shares



Econ/finance, h-indexes

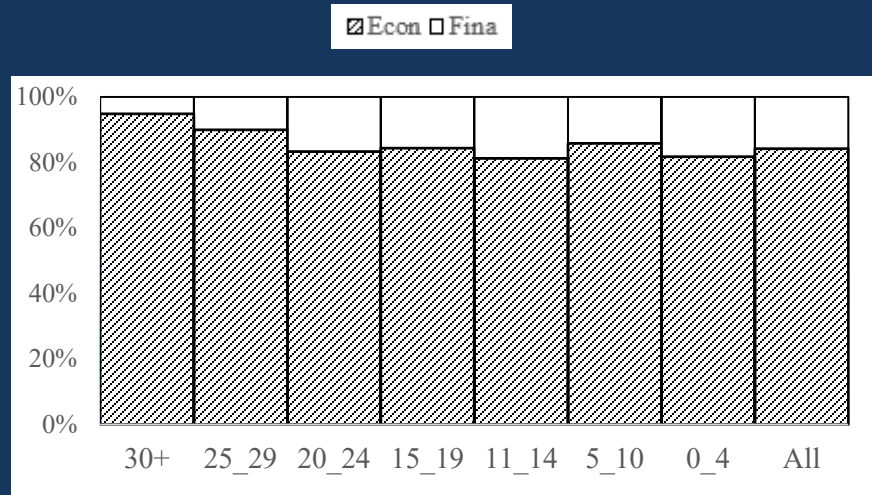


Male/female, shares

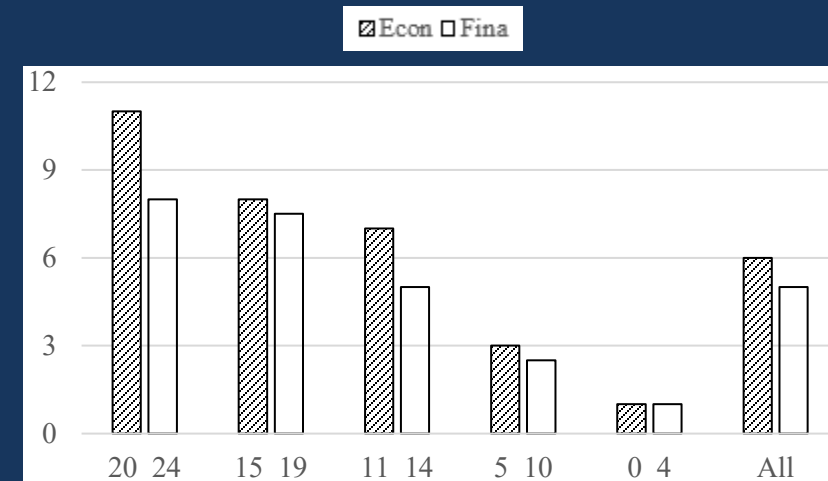


Productivity contrasts

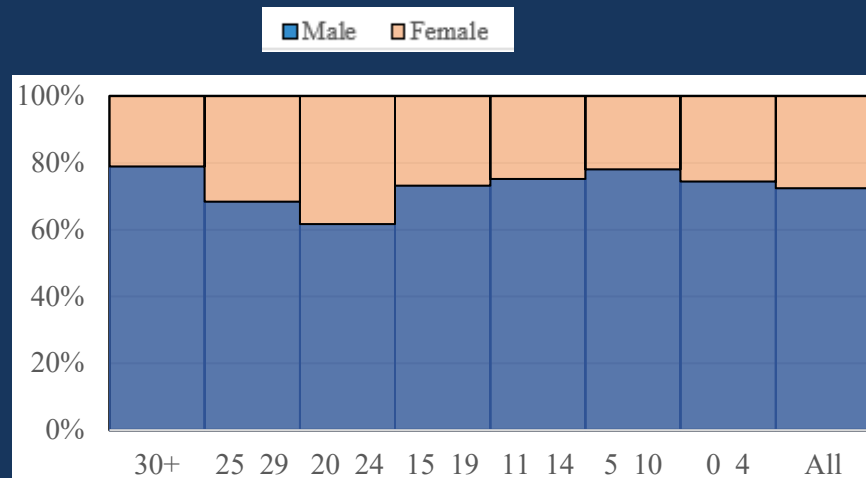
Econ/finance, shares



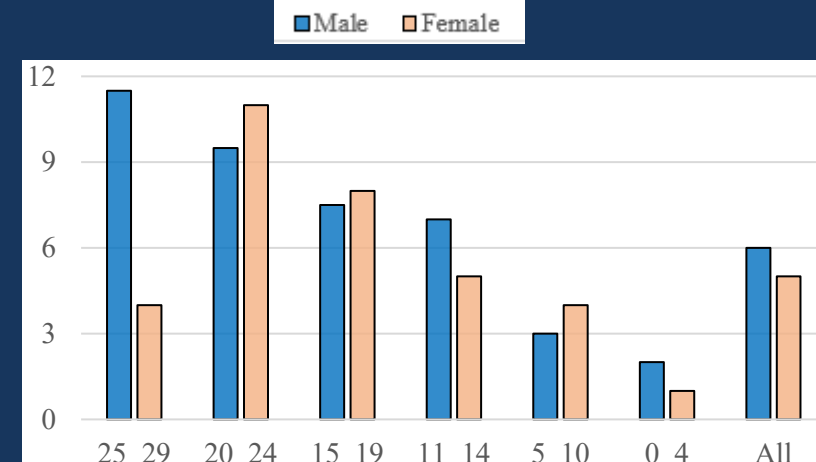
Econ/finance, h-indexes



Male/female, shares



Male/female, h-indexes



FURTHER RESULTS

(in the paper)

1. Sample representative?

- Those now in academia not involved in conferences from Go4 (UNSW, Syd, UQ, UWA): 184 individuals
- Those from Go4 who came: 117 individuals
- Broadly similar composition
- No significant differences in research performance

Conclusion: Sample reasonably representative

2. Time profiles of pubs and cites

3. GOS data

- Underemployment and overqualified
- Earnings

Takeaways

1. Current PhD students: Many rewarding jobs outside academia
2. Academics: Citation profile as research-influence monitor. Excess citations
3. Gender: Females under represented. But no major gender gaps in research productivity
4. Academic administrators: Use research benchmarks in Workload Model

THANK YOU

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