

The Economics of Biology Journals and the Prospects for Open Access

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Acknowledgements

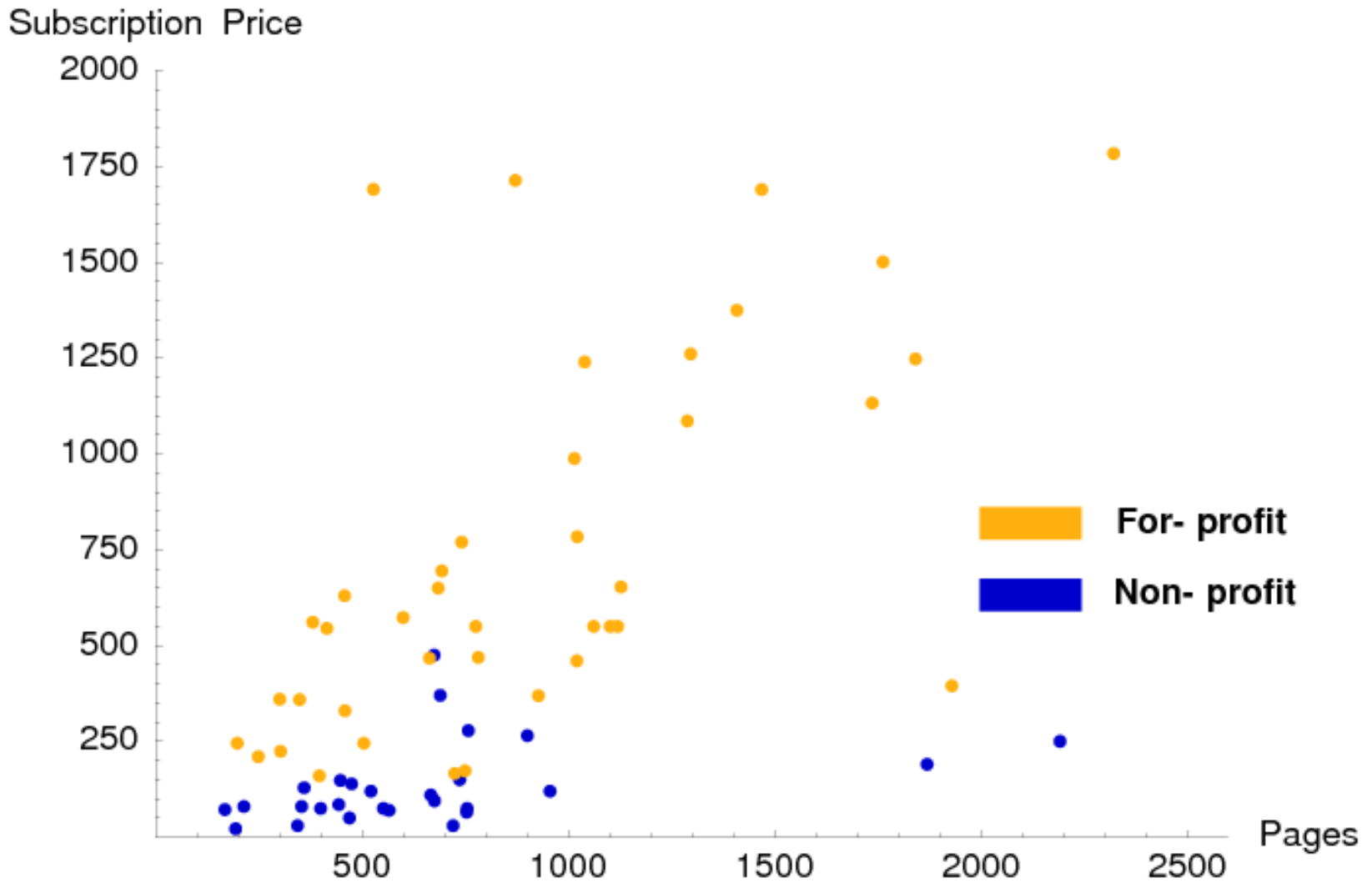
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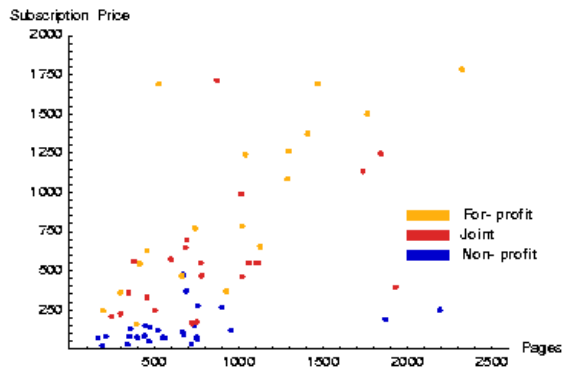


Price and value in the journal market:

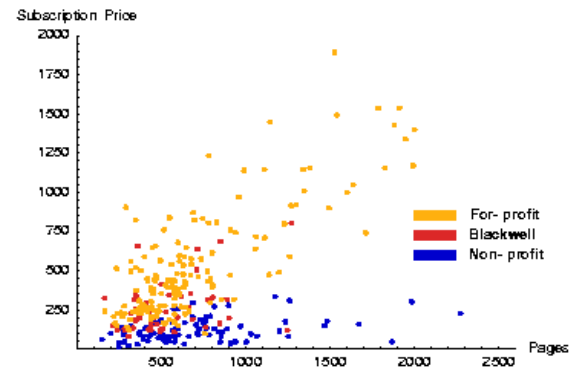
The ecology literature

Price versus pages: Ecology (2000)

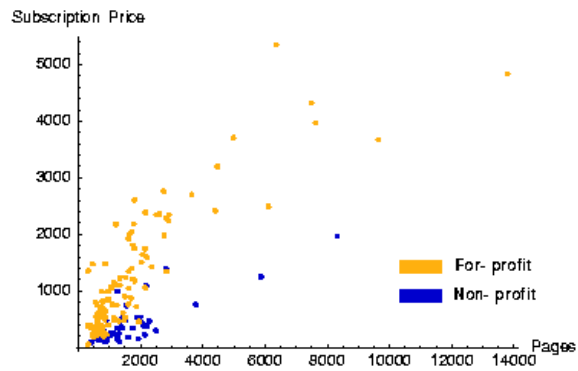




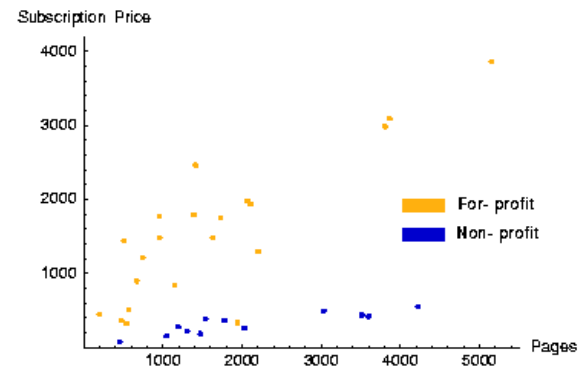
Ecology (2000)



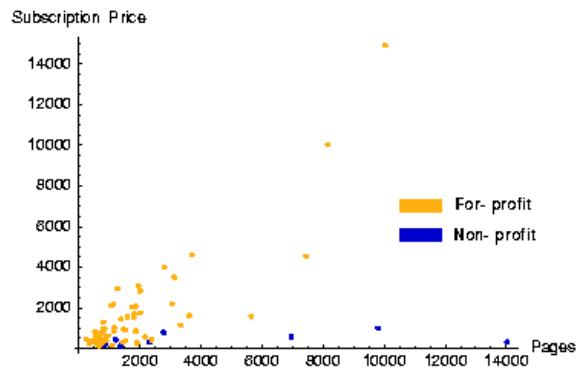
Economics (2000)



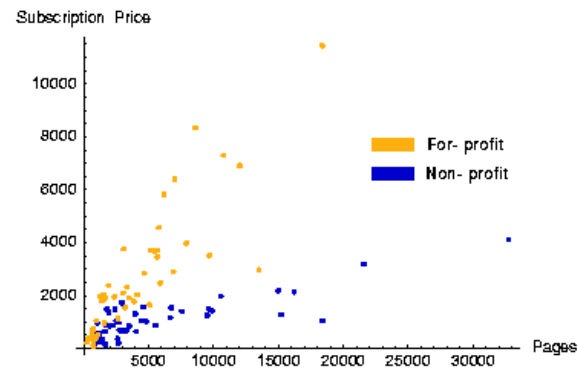
Mathematics (2000)



Atmospheric Sci. (1999)



Neurobiology (1997)



Physics (1997)

Average journal price per page

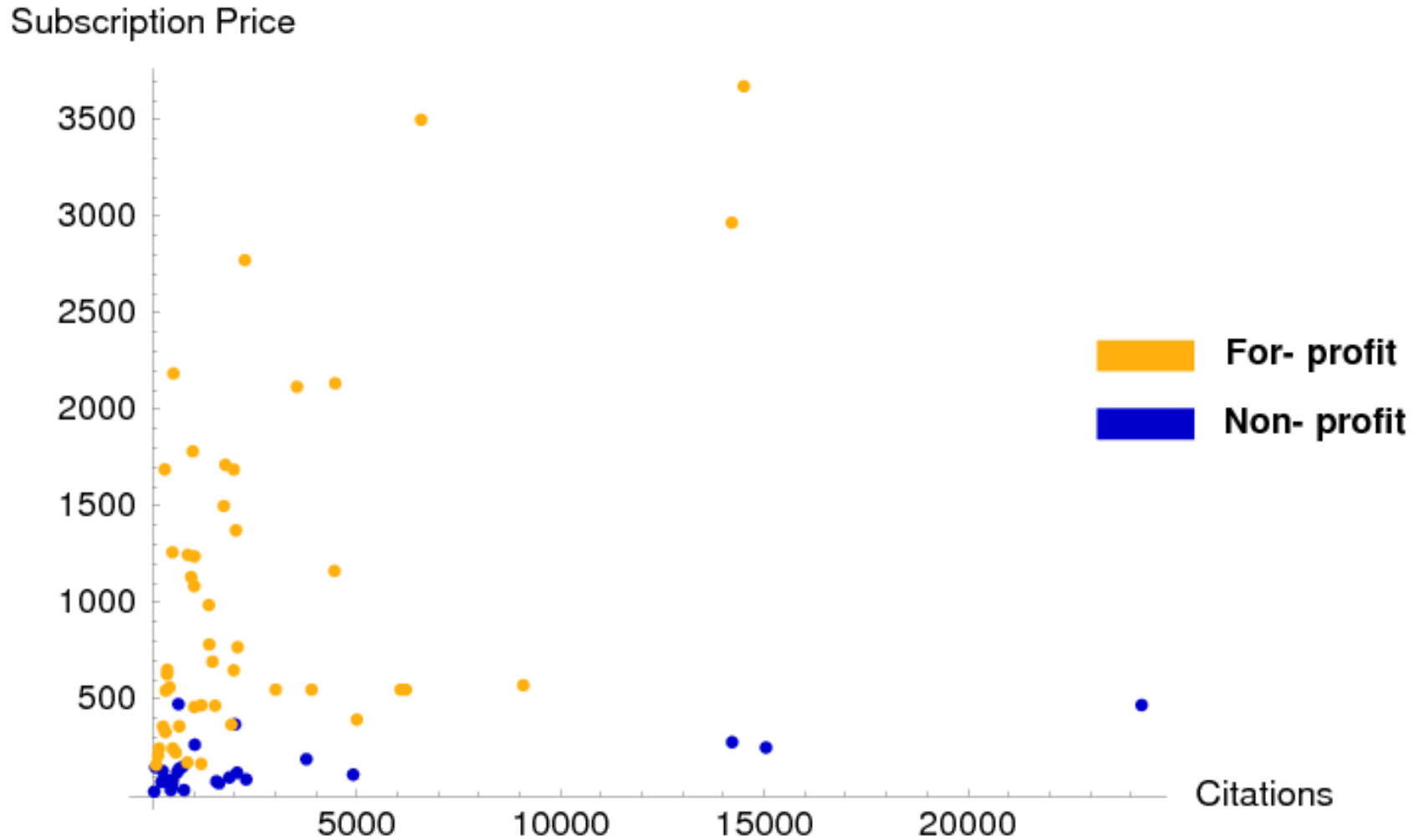
Field	For-profit	Non-profit
Ecology (n=78)	\$ 1.19	\$ 0.19
Economics (n=156)	\$ 0.81	\$ 0.16
Atmosph. Sci. (n=34)	\$ 0.95	\$ 0.15
Mathematics (n=171)	\$ 0.70	\$ 0.27
Neuroscience (n=71)	\$ 0.89	\$ 0.10
Physics (n=93)	\$ 0.63	\$ 0.19

What about value?

Top five ecology journals by
year 2000 impact factor

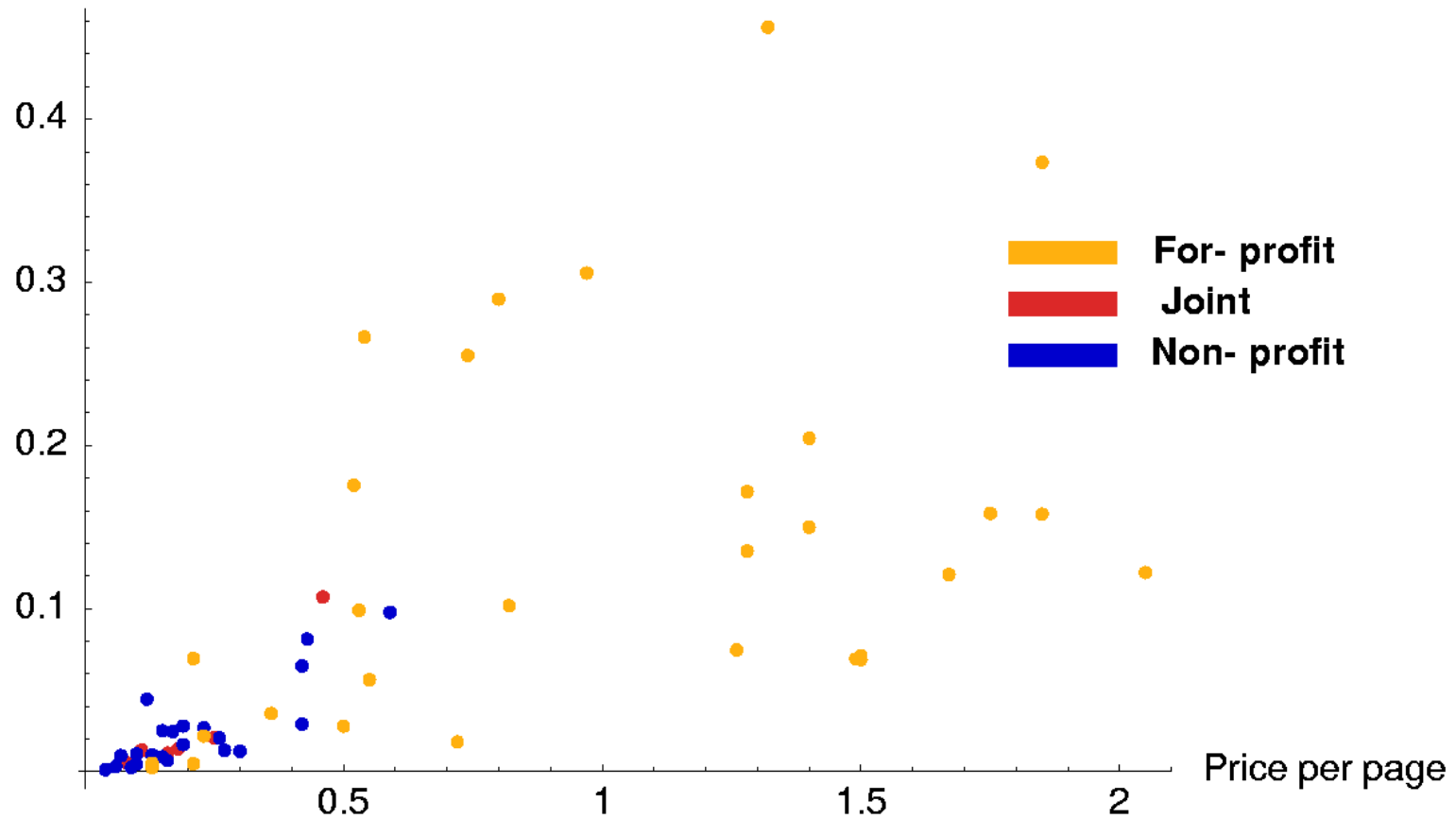
		Price/page	Price/cite
1.	Ecological Monographs	\$0.16	\$0.02
2.	American Naturalist	\$0.37	\$0.02
3.	Global Change Biology	\$0.77	\$0.57
4.	Ecology	\$0.13	\$0.02
5.	Evolution	\$0.11	\$0.02

Cost per citation: Ecology (2000)



Top science journals (2000)

Price per citation



A seemingly backwards market

Many of the higher quality journals set prices near average cost.

Many of the lower quality journals set prices far above average cost.



Mercedes-Benz
\$20,000

Ford Escort
\$80,000

Why would anyone want a Ford Escort?

Substitutes and complements

- From an author's perspective, journals are substitutes.
- But from a reader's perspective, academic journals are substitutes.

Why don't cheaper journals enter the market?

A coordination game hampers free entry

Authors and readers play a coordination game.

		Author	
		Established	Entrant
Reader	Established	(1,1)	(0,0)
	Entrant	(0,0)	(1,1)

A coordination game hampers free entry

Now the established journal can charge rents on its position as coordination equilibrium.

		Author	
		Established	Entrant
Reader	Established	$(0.2, 0.2)$	$(0,0)$
	Entrant	$(0,0)$	$(1,1)$

Conclusions from pricing studies

Non-profit journals are cheaper than for-profit journals, both per-page and per-citation.

(Non-profit journals have broader circulation.)

In most fields, the elite journals are non-profit.

A substantial fraction of for-profit journals offer low value to subscribing libraries.

For-profit publishers are willing and able to charge monopoly prices.

The economics of open access

The flow of resources and money



Pricing models

Reader-pays subscriptions



Complements

Author-pays open access



Substitutes

A heterogeneous market

- Authors can choose author-pays or reader pays. More readers have access to open access.
- They may shop around for lower page fees or switch to reader-pay journals.
- Exchange rate:

Dollars  Readers

In a heterogeneous market we predict:

1. For-profit publishers are unlikely to embrace open access, because of the increased substitutability in this market. Societies that generate profits from journals may also hold back.
 2. Authors will only pay top-dollar to journals that are already established as coordination equilibria.
- **Entry** into the open-access market will be difficult.
 - **Conversion** to open-access is unlikely except for top non-profit journals.

The best of both worlds?

Open access is highly beneficially to the academic community but economically tricky for all but the highest-tier.

Non-profit and society journals are a spectacularly good deal relative to most for-profit journals.

Delayed (embargoed) access should provide most of the benefits of open access without appreciably reducing subscription revenues.

More information:

<http://octavia.zoology.washington.edu/publishing/>

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