



Financial Sustainability of Open Access Scholarly Journals at Scale

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Collision Course Towards Global OA?

North America

- Funding Agency OA Policies
- University faculty OA Policies
- White House OSTP Directive
- FASTR



Europe / UK

- Finch Report
- APC Offset Agreements
- OA2020
- Netherlands Call to Action on Open Access



Pay It Forward

Investigating a Sustainable Model of Open Access Article Processing Charges for Large North American Research Institutions

“build a set of financial scenarios, or models, depicting the financial implications an APC-based system of scholarly journal publishing, for the conversion of the current system of scholarly journal publishing to an APC-based system, for large North American research institutions.”



Scope



- North American research institutions (U.S. and Canada)
Library partners: University of California, Harvard, Ohio State University, University of British Columbia
- Scholarly journals and conference proceedings only
- Models APC-funded scholarly journal publishing system
at 100% scale



Quantitative Research

Ivy Anderson

Mark McCabe

David Solomon & Bo-Christer Björk

Greg Tananbaum

Mat Willmott



Lots of Data!

- Journal expenditure data from library partners (2009-2013)
- Publication data from Web of Science and Scopus (2009-2013)
- Research funding data from HERD (U.S. only)
- Article Processing Charge data from multiple sources
- Publication cost data from multiple sources



What Does it Cost to Publish an Article?

- Cost Per Article: ~\$500 to ~\$4000
- Plausible minimum CPA is **\$1,103** (including 13% surplus)
- **\$1,864** emerged as defensible CPA, based on current OA expenditures at partner institutions



Current CPAs not very useful

Depend on

- what's included in publishing costs
- publication volume
- publisher 'fixed effects'

e.g PeerJ vs eLife



Current Article Processing Charges

- APCs for *fully* OA journals (in which our authors actually published) averaged **\$1,775 USD**
- APCs for *converted* OA journals of major subscription publishers averaged **\$1,825 USD**

Solomon & Björk



Current APCs not very useful

- still fluctuating (new offsetting deals)
- driven by a few large OA publishers
- few large commercial publishers included
- few humanities & social sciences journals included



Example Library Break-even Cost

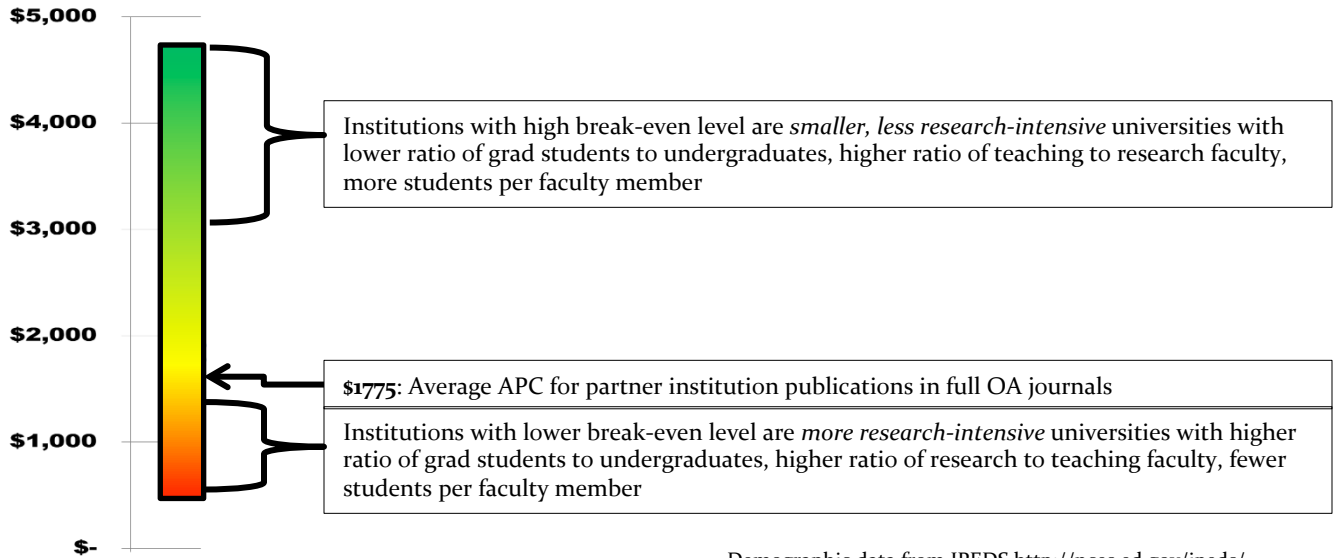
Sample year = 2013

- Journal budget: **\$4.02MM**
- Published papers: **3,593**
 - with associated grants: **2,492**
 - without grants: **1,101**
- Break-even APC level
 - library budget only: **\$1,119**
 - including grant funds: **\$3,651**

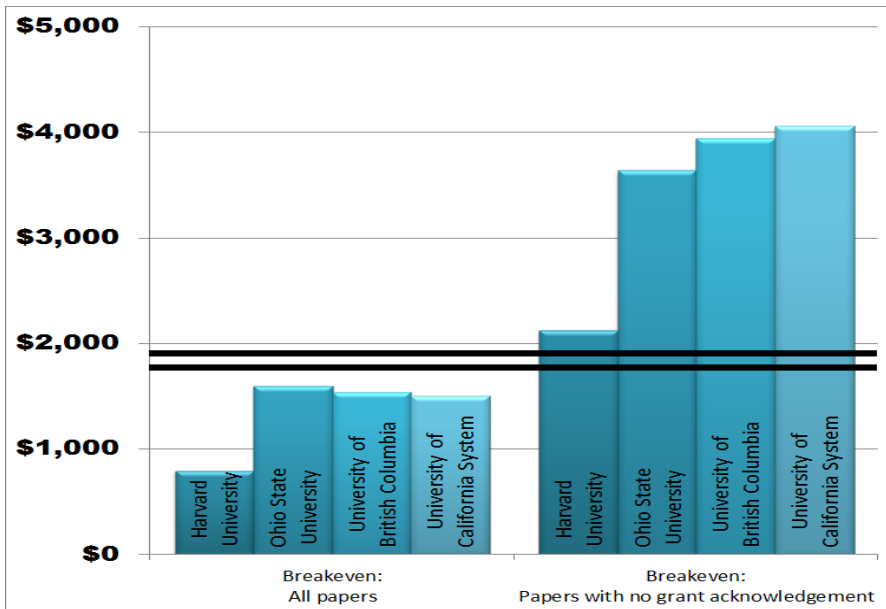
Current avg APC = \$1,775 - \$1,825; CPA = \$1,864



Library Break-even Costs



Break-even Cost: Grants Pay



\$1775: Average APC for partner institution publications in full OA journals



What will APCs be in the Future?

Two distinct publisher types

- No correlation between “quality” and APCs (lots of these now, e.g. eLife)
- Strong, positive correlation between “quality” and APCs (fewer now, but includes most major publishers)

- Assume publishers will set APCs in relation to journal “quality”

- IF/SNIP as proxy for “quality” (not an endorsement!)

Estimated APC = \$1147 + (\$709.4 * SNIP)

Baseline journal (SNIP=1.0) APC = \$1,856



Redirecting Example Library Budget

- Journal subscription budget: **\$4.02MM**
- Estimated APC expenditures for 3,593 papers: **\$7.49MM**
- Estimated APC expenditures for 1,101 papers without grants: **\$2.22MM**



Some Conclusions So Far

- Future APCs not perfectly predictable, nor disciplinary differences.
- But we can build crude estimations and improve them over time



Some Conclusions So Far

- In North America, library journal budgets alone won't cover all APCs for research-intensive institutions
- But authors' grant funds at those institutions could cover the difference



But Will It Be Sustainable?

“funding a journal with APCs is acceptable **if authors do not have to pay the money themselves.**”

...

“I think this [OA Big Deals] is beginning to happen, and that publishers are finding ways to create an APC-based market that will be as dysfunctional as the subscription-based market is. The basic problem with APCs is that publishers can charge what they like, knowing that if universities start to tell academics that they must publish in cheaper journals, there will be an uproar about the perceived threat to academic freedom. **I have never seen a convincing explanation for how a properly free market in APCs could work.**”

Sir Tim Gowers, interview with Richard Poynder, 2016



Qualitative Research

Carol Tenopir

Allison Fish

Greg Tananbaum

ALPSP (publishers)



Large-scale Author Study

- 10 focus groups of 77 faculty, postdocs & grad students, across all disciplines
- 2,020 survey respondents: faculty, graduate students, postdocs, across all disciplines



Importance of Factors in Selecting Where to Publish

1. *Quality and reputation of journal*
2. Fit with scope of journal
3. Audience
4. Impact Factor
5. Likelihood of acceptance
6. Time from submission to publication
7. Editor or editorial board
8. **Open Access**

“Taken together, it is evident that reputation building within a specific field is at the heart of what matters most to academic scholars.”



Author Willingness to Pay

- **Grant Funds** [Humanities: \$100; Life Sciences: \$2000]
- **Library OA Funds** [Humanities: \$100; Life Sciences: \$2000]
- **Discretionary Research Funds** [Humanities: \$100; Life Sciences: \$1000]
- **Personal Funds** [Humanities: \$0; Life Sciences: \$250]

Key Observation:

author discretion → incentive to economize



Some Conclusions So Far

- Attitudes toward open access and APCs vary widely between disciplines.
- But all authors are price sensitive, if they have to choose where to publish based on cost/quality.



Achieving Long-Term Sustainability

Author Behavioral Objective:

- Authors choose the “best” platform for their article, given the price of access, publication funding, platform readership, quality of editors, etc.
- Publishers respond to *elastic* author demand by competing for submissions.

Claim:

- Under *ideal* conditions competition in an OA environment *lowers* cost of scholarly communication
- Many mitigating factors, e.g. platform ownership concentration, *delegation of APC payment responsibility, etc.*

Implementation:

- Give authors discretionary research funds that can pay APCs *and other research expenses*
- Institutional subsidies level the playing field



What Would This Cost?

Example 1: Library subsidy up to **\$1,164**
(journal budget break-even cost)

- Library pays **\$4MM** (3,593 papers)
- Grant funds cover **\$2.5MM** (2,492 papers)
- Author discretionary funds cover **\$1MM** (1,101 papers)

\$1M increase to institution (+25%)



What Would This Cost?

Example 2: Library subsidy up to **\$1,857**
(SNIP=1.0 journal APC)

- Library pays **\$6.4MM** in subsidies for 3,593 papers
- Grant funds cover **\$.8MM** (1,739 papers)
- Author discretionary funds cover **\$.3MM** (666 papers)

\$2.7MM increase to institution (+66%)



Prediction

Giving authors discretionary funds introduces price competition, without interfering with author choice in where to publish.

This is the best chance to

- encourage a competitive journal market,
- encourage authors to explore new options,
- drive costs down over time.



TBD

- Concerns about under-resourced authors
 - Disciplines without research funding
 - Young/Independent scholars
 - Global South
- Stakeholder roles (e.g., library role in ensuring preservation, reuse rights, etc.)
- Lack compliance tracking mechanisms



Project Report, Bibliography, Data, Tools

http://icis.ucdavis.edu/?page_id=713

Report: bit.ly/29dJcCv



The current scholarly journal system ain't working

We all want open access

It's time for change
but change is hard in distributed systems

If not this, what?

Discuss!

