Watching your Cards in the Big Deal

A la carte prices

- The median institutional subscription price per article of journals published by major commercial publishers is more than 4 times as high as that charged by non-profits.
- Ratio of price-per-citation is even higher.

--*Source, Journalprices.com*

Data collected by Preston McAfee and Ted Bergstrom

Bundle Discounts

Defenders of the big publishers explained:

"Comparing *a la carte* prices is not appropiate because publishers give large discounts for buying their entire bundle. Often the bundles cost less than half of the sum of *a la carte* prices."

Bundle price project

- Paul Courant, Preston McAfee and I decided to collect prices paid by major universities for bundled contracts.
- Problem:
  - Confidentiality clauses in journal contracts forbid librarians to tell what they pay.
  - Contracts have complex terms
- Our Response: Freedom of Information Act requests from state-funded institutions

Publishers’ Response:

Springer and Elsevier told libraries they couldn’t respond.

Elsevier sued Washington State to stop them from responding.

Superior Court Judge in Colfax, WA rejected Elsevier’s claims.

Secrets of the “Big Deal”

What were they trying to hide?

- Even with bundled “discounts”, commercial publishers prices per citation or per article are much higher than those of non-profits.

- There are striking differences in the prices paid by similar universities.

- Hard bargaining for journal bundle contracts can matter

Cost per Article of Publisher Bundles*

*2010 bundle prices for average Research 1 university

Publisher	Subscription Cost per Article
Elsevier	$4.82
Springer	$3.64
Wiley	$10.76
Emerald	$5.20
Sage	$9.60
Taylor & Francis	$8.55
Non-profits (95%)	$3.00

Cost per Cite of Publisher Bundles*

*2010 bundle prices for average Research 1 university

Publisher	Cost per Citation
Elsevier	$2.24
Springer	$3.08
Wiley	$5.19
Emerald	$6.94
Sage	$7.24
Taylor & Francis	$10.94
Non-profits (95%)	$0.80

Dealing with subscriptions

- For-profit publishers try to extract "what the market will bear."
- Limited budgets lend bargaining power.
  - Elsevier price increase, 2005-2014
    - Iowa 61%
    - California 28%
  - Elsevier prices
    - Michigan $2.2 million
    - Wisconsin $1.2 million

Variation in Elsevier Contracts

University	Enrollment	2009 Price
Texas	47,000	$1,500,000
Georgia	33,000	$1,800,000
Michigan	39,500	$2,200,000
Wisconsin	35,000	$1,200,000
Colorado	28,000	$1,700,000
Kentucky	23,000	$1,300,000
Cal (scaled)	27,000	$1,100,000

How big is the discount?

- Elsevier's Freedom package includes almost all of their journals.
- Purchased one-by-one, 2009 total cost is about $3.1 million
- Example: U of Michigan paid $2.2 million for its Freedom Package
- That's a 30% discount, right?

Not Exactly

- Freedom package contains hundreds of journals that are rarely cited, but have high individual subscription prices.
- If Michigan had spent its $2.2 million with Elsevier on single subscription journals, it could have obtained journals that get 91% of all the citations to Elsevier journals.
- So, for Michigan, the Big Deal Price is really only a 9% discount from list.

Learning about costs

.

• For-profit publishers are highly secretive about their subscription numbers and direct cost measures.

• But there is much to learn from publicly available information and one mathematical tool:

Long Division

• Financial reports of companies announce their revenues and profits from journal sales.

•Revenues minus profits equals “costs”

•With some work, one can find total number of articles published per year.

•Divide to find costs per article and profit per article.

Elsevier's revenues, profits and cost per article

	Total in 2015	Per Article Published
Revenue	$3.17 billion	~$8,000
Profit	$1.16 billion	~$2900
"Cost"	$2.01 billion	~$5,100

Number of articles published in 2015, ~400,000

Source: Elsevier Publishing: a look at the numbers and more by Tom Reiler, on Elsevier website

Revenue and Profit from Elsevier (RELX) financial statement 2015

Taylor Francis (Informa) Revenues, Profits and Costs per Article

	Total in 2015	Per article
Revenue	$685 million	~$13,000
Profit	$252 million	~$4,800
“Costs “	$433 million	~$8,200

Estimated number of articles Published in 2015—52,200
Revenue and Profit from Informa Financial Statement 2015

Is Open Access the Solution?

Monopoly power in Subscriptions

- Subscription journals have monopoly power protected by copyright.
- Suppose that journals A and B are equally prestigious and a subscription to B costs 3 times as much as a subscription to B.
- It doesn't make sense to subscribe twice to A rather than to both A and B.
- Authors want to see them both.

Will competition bring open access prices down?

- If A and B are equally prestigious and it is cheaper to publish in A than B, an author who has to pay the publication fees and has two papers to publish will generally want to publish both in A.
- This competitive force should drive author publication fees towards average costs.

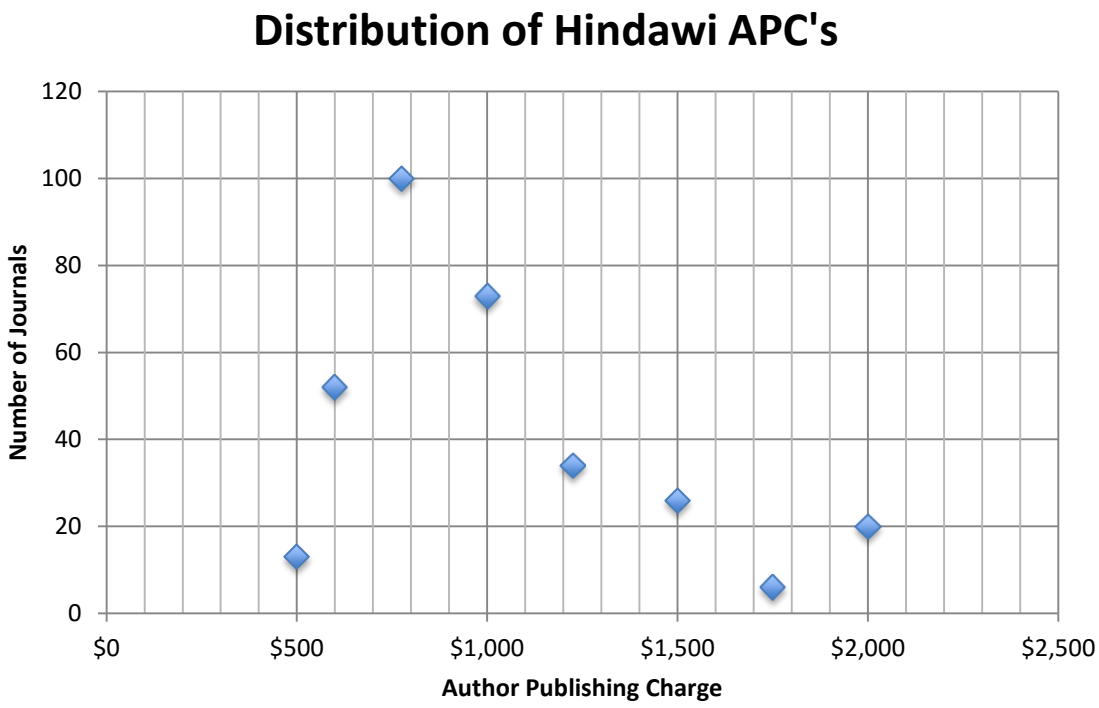
Prestige Monopolies?

- Authors will pay more to publish in a prestigious journal than in a less prestigious one.
- New journals can gain prestige only slowly.
- So rents to reputation of respected commercial journals will not easily be competed away.
- But professional societies have some advantage here.
  - Much to be said for expanding their offerings.

Author publication fees for open access journals: Some non-profits

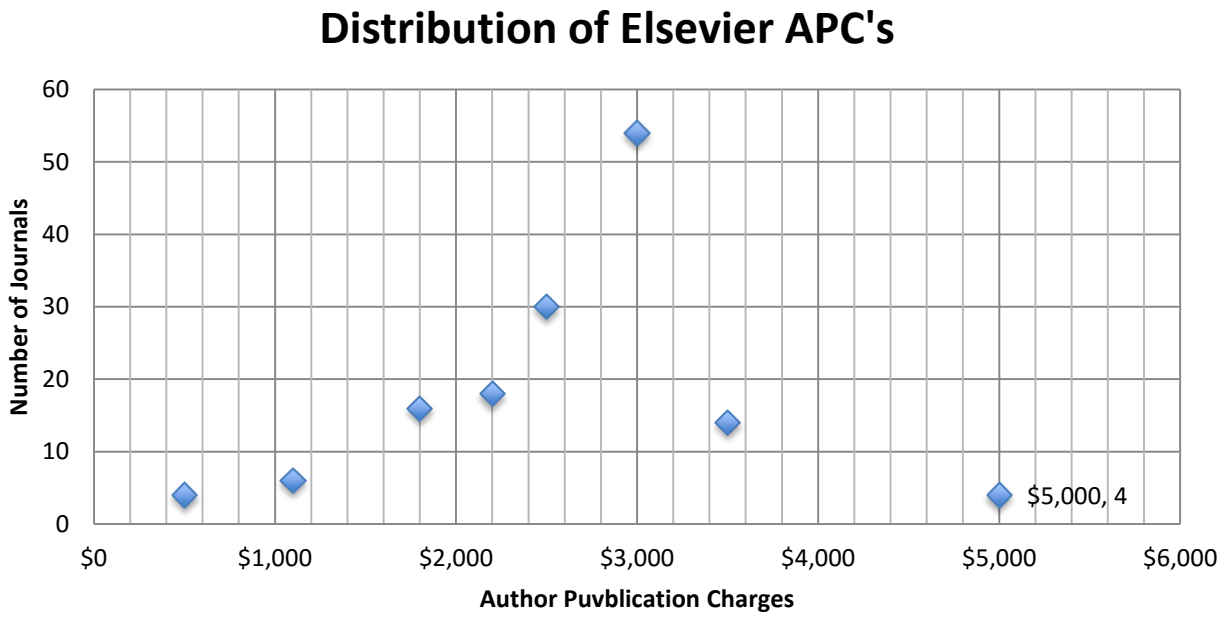
•Ecological Soc Am	$1,250
•Company of Biologists	$1,495
•American Chem Soc	$1,500 (+ membership fee $166)
•PLOS 1	$1,500
•IEEE	$1,750
•Genetics Soc Am	$1,815
•Optical Soc Am	$1,900
•Am Soc Microbiologists	$2,250
•PLOS Subject journals	$2,250
•PLOS Medicine, PLOs Bio	$2,900
•Physics Review X	$2,900

Hindawi: An insurgent For-profit competitor



Interpretation of Hindawi pricing

- Hindawi is a long run profit maximizer.
- They set APC of successful journals revenue-maximizing price.
- Start-up journals may have APC below average cost in hopes that they when established, price can rise.
- Of Hindawi's 324 journals:
  - 20 have APC at $2,000
  - 207 have APC $700-$1250
  - 65 have APC $500-600
- Story is consistent with profitability at APC's of $1,000.


Distribution of Elsevier APC's
60
50
40
30
20
10
0
Number of Journals
$0
$1,000
$2,000
$3,000
$4,000
$5,000
$6,000
Author Puvblication Charges
$5,000, 4

Interpretation of Elsevier APC's

- Elsevier's modal APC is $3,000
  - –That's 4 times Hindawi's mode
  - –About twice that of professional societies and PLOS 1
- But compare that to Elsevier's $8,000 revenue per subscription article.
- Apparently Elsevier knows that the open access market is much more competitive than the subscription market and prices accordingly.
- *Caveat* Some of the Elsevier open access journals are owned by professional societies, who may restrain APC pricing

Author publication fees for hybrid open access: Commercial Publishers

- Springer $3,000
- Wiley $3,000
- Taylor Francis $2,950
- Elsevier $500-$5,000

Why are “costs” of big for-profit publishers’ subscription journals so high relative to open access?

- Marketing and contracting costs.
- Legal protection.
- Inflated salaries of executives
- Armies of lobbyists.
- Obsolescent technology.

“The best of monopoly profits is a quiet life.”

John R. Hicks

So why is switching not easy?

- Elsevier collects about $8,000 for each article it publishes. Taylor Francis collects about $13,000.
- But open access journals can be profitably published for less than $2,000 per article.
- The Problem: The $8,000 is collected from thousands of libraries, the world over.

The $2,000 is collected from a single source.

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The Stag Hunt Game

Rousseau's Stag Hunt

- Two hunters pursue a stag. One posts up, the other drives the stag toward him.
- If both play their role, the kill the stag and share it. Each gets payoff of 2.
- Each encounters a hare. If either chases the hare, he gets it, but the stag escapes. Hare chaser gets payoff 1. Stag hunter whose partner defects gets 0.

Stag Hunt Game matrix

	Stag	Hare
Stag	2,2	0,1
Hare	1,0	1,1

There are two “Nash equilibria”.

1) Both play stag.
2) Both play hare.

Librarians catching hares

- The current state of affairs for publishing is analagous to the all play “Hare” outcome.
- (Almost) all subscribe to the Big Deals. Given that the others do so, that is wise.
- If none subscribed to the Big Deals and instead subsidized open access publication by their faculty, all would be better off.

This is not a prisoners' Dilemma!

- In Prisoners' dilemma, there is no good equilibrium: only a bad one where both players defect.

- In Stag hunt there is a good equilibrium and a bad equilibrium.

- Can universities and their funders break out of the hare equilibrium and find the stag equilibrium?

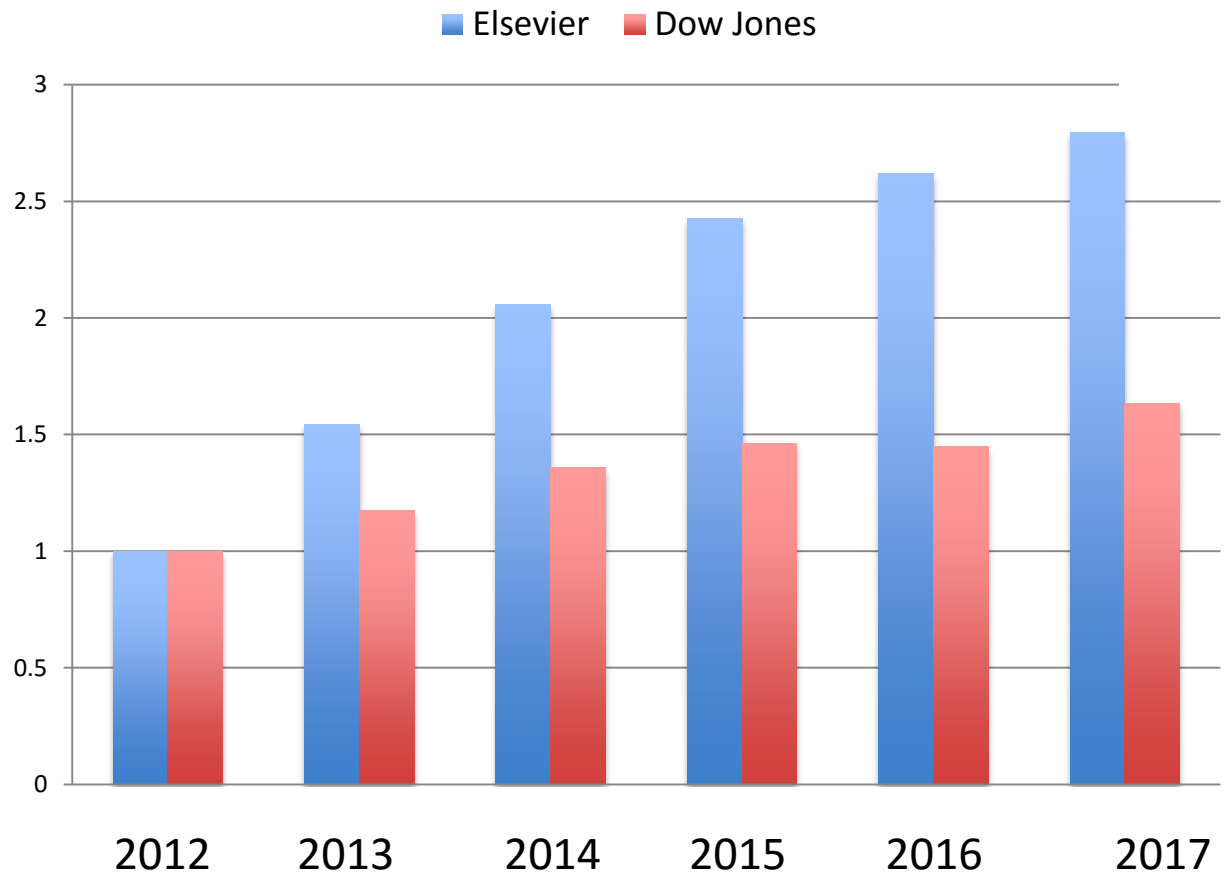
Stag hunt with many hunters

- The journal market is a multi-player version of the Stag Hunt.
- There will be some tipping point such that if the fraction X of all libraries drop all overpriced subscription journals and spend the money on APC charges, then all libraries will be better off doing so.
- If researchers at other universities don't subscribe to expensive journals, few will publish there. So it doesn't pay to subscribe.
- If a university wants its researchers to achieve prestige, it must induce them to publish open access.

Beyond the tipping point

- If somehow, universities reach the tipping point, with top universities not buying expensive subscriptions, but subsidizing open access, this outcome will be stable.
- If others are acting this way, it pays you to do so to.
- The hard part is getting to the tipping point since the outcome where all subscribe to Big Deal is also stable in the sense that if almost everybody else subscribes, a university is better off subscribing than subsidizing open access for its own authors.

What do investors think?



Escape from the trap

- Target:
  - –Most articles would be published either open access or in cheap subscription journals.
  - – Universities drop expensive subscriptions and

    spend some of the money saved on subsidizing open access publication.
  - – Authors who want wide attention must then go open access

What if university picks up entire tab for APC's?

- The user doesn't pay for the product he is using and has little incentive to respond to price.
- Authors will want to publish in most reputable journal regardless of cost.
- Journals with established reputations can continue to extract profits from universities.
- What should we expect?

Hint: What happens when the insurance company picks up the tab?

Doing better: Suggestions to funders and universities.

- Place caps of $1,000-$1500 on payments toward APC's. (perhaps do partial matching for payments above the cap.)
- If authors want to publish at a higher price, let them do it with their own money.
- Prediction. Most journals will set APC's close to caps.

But how to move to Stag equilibrium?

- Can we do it with the kind of small steps that

funders and university administrators might be willing to take?

I have a few suggestions, but others are likely to think of more and better ones.

Suggestions:

- Big universities should cancel Big Deals, subscribe only to the most cost-effective offerings of big publishers and gradually reduce these subscriptions.
- While Big Deals offer serious discounts to smaller colleges and masters' institutions, the Big Deal discount is small for big research universities.
  - Harvard has cancelled its Big Deal
  - Michigan example-For their Elsevier Big Deal fee, UM could get 91% of citations by subscribing individually to the journals offering most citations per dollar.

Breaking out of the hare equilibrium

- If big universities do not buy Big Deals, they will not subscribe to overpriced, little used journals.
- This reintroduces competitive pressure on *a la carte* prices
- Authors will not want to publish in overpriced journals that aren't subscribed to by top universities.
- With lower *a la carte* prices, Big Deals become less attractive to all libraries.

What if they keep Big Deals

- Green Open Access:

Universities and governments insist that Big Deal contracts explicitly recognize authors' right to post final versions of their papers in a publicly available archives and make it obligatory and dead easy for faculty to deposit papers.

- Rebates:

Universities should insist that their Big Deal contracts specify that Big Deal payments will be reduced by the amount of money they spend on subsidizing open access publication in journals contained in that deal.

More suggestions:

- University provosts and government agencies agree to reduce their allocation of funding to journal subscriptions by, a fixed percentage (e.g. 15%) per year and move these funds to supporting open access. (Timing might account for expirations of existing contracts.)
  - This puts libraries in strong bargaining position to reduce Big Deal prices.
- Funders and universities encourage (bribe?) professional societies to start new open access journals and/or convert existing subscription journals to open access.

How to Reduce APC's for top journals

- Prestigious journals reject most of the articles submitted. Acceptance rate of 1 in 6 is common. Sometimes 1 in 20.
- They must handle many papers for each one they publish.
- A simple remedy. Submission fees.
  - Economics journals often charge $200-$300 submission fees.
  - Fee revenue covers handling cost for rejections
  - Discourages frivolous submissions
  - Allows APC's to be reduced.

Librarians with
captured stag?

Maybe some day….