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UKSG Open Access: Working with the
offsetting deals – budgets and workflows,
London, 27 May 2015

Current Research into the Total Cost of Publication

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Research

Pinfield, S., Salter, J., & Bath, P. A. (2015). **The ‘total cost of publication’ in a hybrid open-access environment: Institutional approaches to funding journal article-processing charges in combination with subscriptions.** *Journal of the Association for Information Science and Technology* (Early view). Retrieved from <https://dx.doi.org/10.1002/asi.23446>.

Johnson, R., Pinfield, S., & Fosci, M. (Forthcoming). **Business process costs of implementing “gold” and “green” open access in institutional and national contexts.** *Journal of the Association for Information Science and Technology*, (In press).

Plus other ongoing work



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Context

- The rise of ‘Gold’ open access (OA) funded by article processing charges (APCs):
 - Fully-OA journals
 - Hybrid OA/subscription journals
- Development of policies to accelerate OA adoption with an emphasis on Gold in the UK, particularly:
 - Wellcome Trust
 - RCUK
 - Other medical research charities
- Concerns regarding ‘double dipping’
 - Lack of transparency in the APC (and subscription) market
 - ‘Offsetting’ arrangements difficult to test and *institutional-level* benefits unclear
- Other concerns
 - Business processes including administration costs



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Drivers

- Need for the HE community to establish an evidence base to inform customer choices, policy development and negotiations with publishers
- Need to determine what institutions are actually paying rather than list prices
- In particular, need to understand the “total cost of publication” (Willettts, 2014) for institutions:

$TCP = \text{Subscriptions} + \text{APCs} + \text{New admin costs}$



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Data

- Collaboration between Jisc and Sheffield, working with Information Power Ltd
- Data gathered from 23 UK research institutions in March/April 2014:
 - 12 Russell Group
 - 10 pre-92 universities
 - 1 specialised research HEI
- Data including:
 - APCs paid centrally
 - Subscriptions
 - Estimated additional administration costs
- Data collected on a 'give us what you have got' basis and therefore comes with caveats

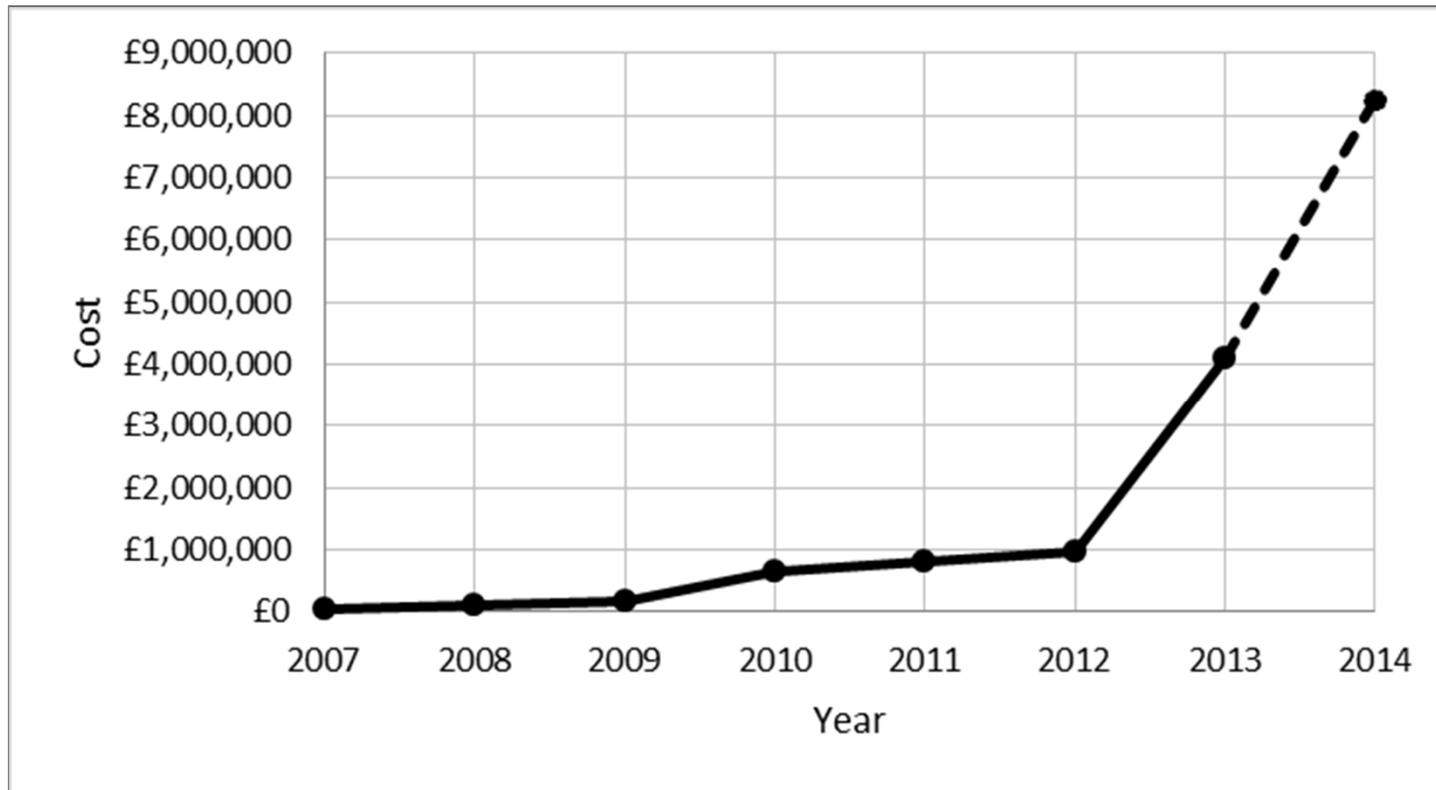
APC Totals

Year	APC numbers (number of institutions making payments)	Total cost	Mean	Median	Minimum	Maximum
2007	31 (1)	£40,595	£1,310	£1,250	£235	£2,827
2008	67 (1)	£108,442	£1,619	£1,432	£456	£4,022
2009	99 (3)	£177,200	£1,790	£1,725	£246	£4,023
2010	380 (8)	£641,798	£1,689	£1,761	£115	£4,800
2011	469 (9)	£818,150	£1,744	£1,800	£175	£5,280
2012	570 (14)	£977,848	£1,716	£1,738	£183	£4,800
2013	2445 (23)	£4,097,981	£1,676	£1,680	£82	£4,955
2014	1081 (23)	£1,784,879	£1,651	£1,554	£107	£4,660
Total	5142	£8,646,892	£1,682	£1,674	£82	£5,280

Analysis of the 23 HEIs' APC payments, 2007-14;
Showing rise in the number of payments; relatively stable mean APC
prices; wide variation in prices paid



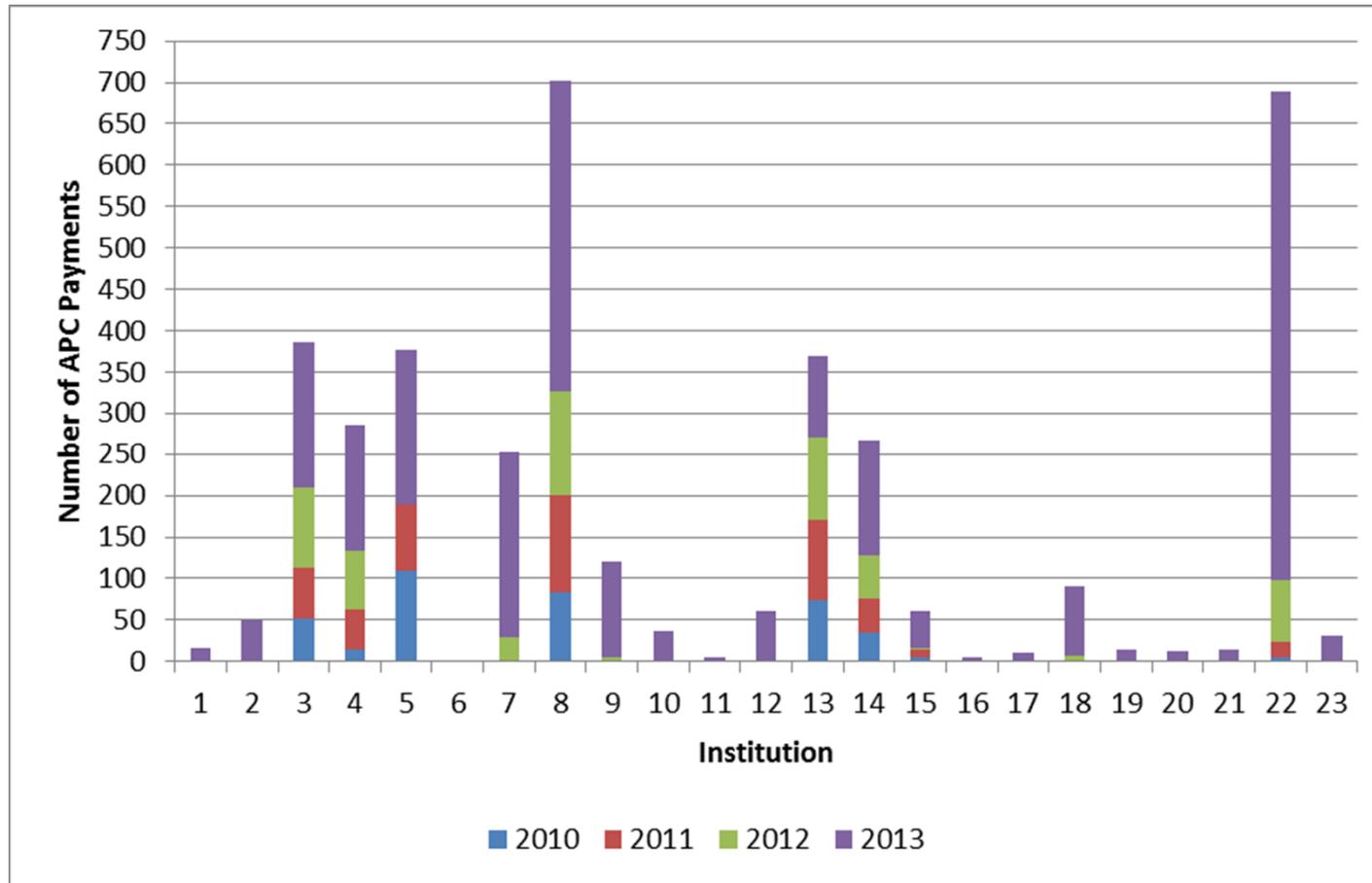
Growth of APC Costs



23 HEIs' total spend on APC payments, 2007-14;
2014 projection based on expenditure to 20 March 2014;
Showing a marked rise from 2012, expected to continue



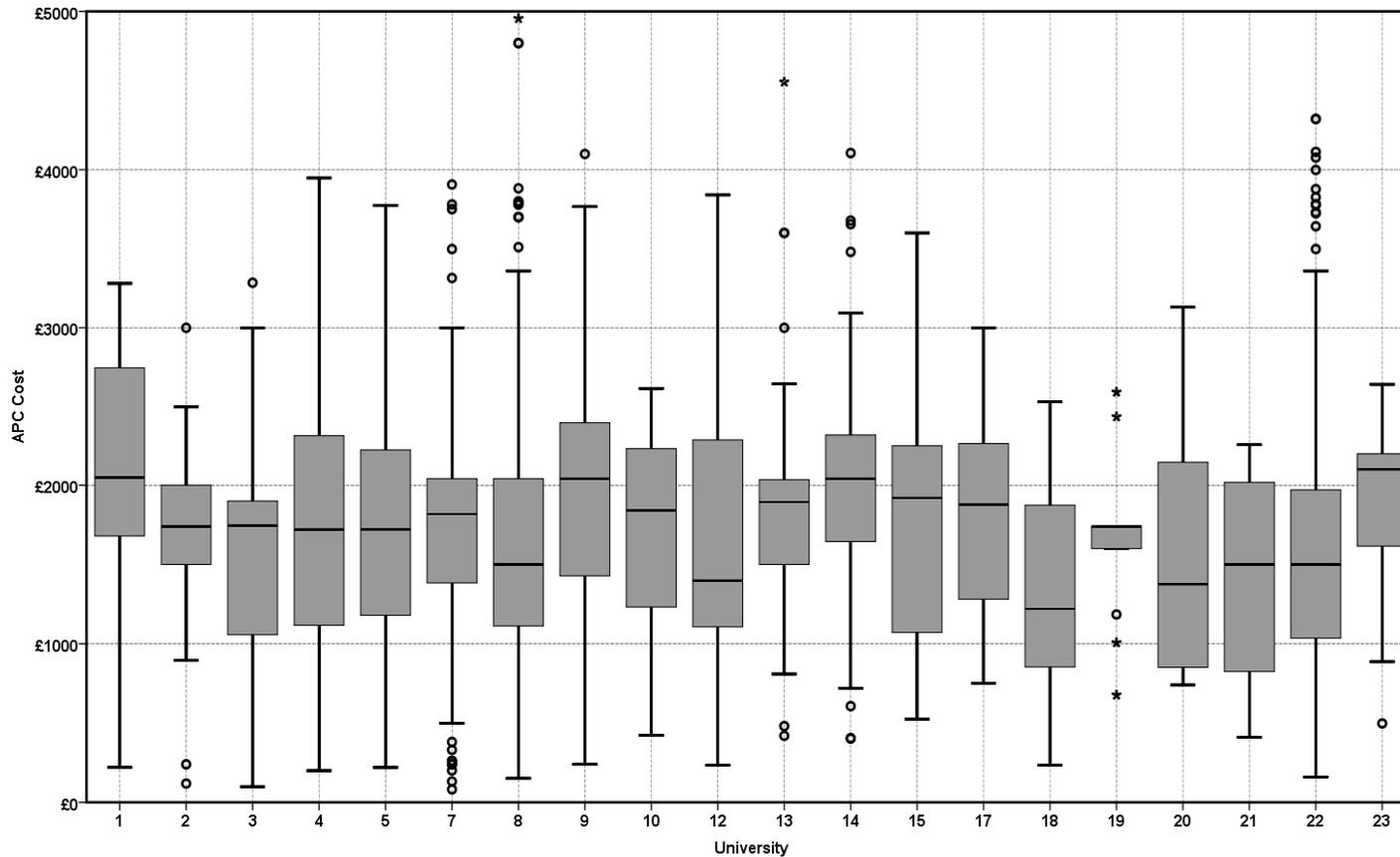
Numbers of APC Payments



23 HEIs' numbers of APC payments, 2010-13;
Showing the increase in activity, particularly in 2013



APC Prices per Institution



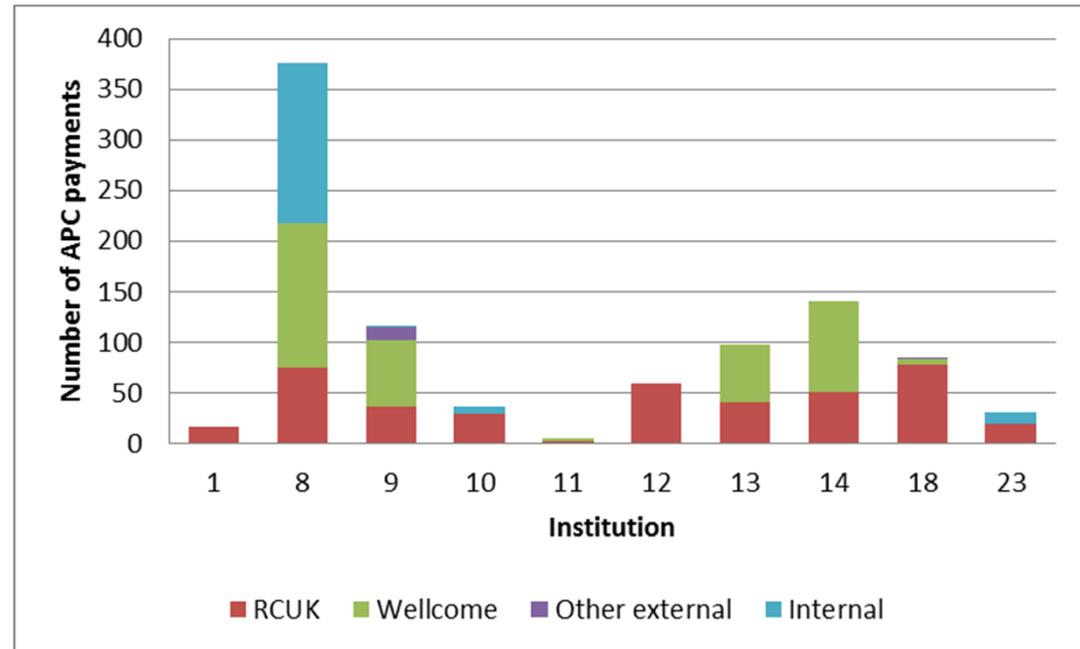
Range of APC prices paid by the 20 HEIs (which made 10 or more payments) in 2013;
Showing a wide variation in APCs paid but a 'band' in the interquartile range



APC Funding Sources

77% of the APC payment records (3964 of the 5142) identified a funding source. Of these:

- Wellcome Trust, 2264 (57%)
- RCUK, 1387 (35%)
- Other external funders, 43 (1%)
- Internal funding, 270 (7%)



10 HEIs with complete records of funding sources for APCs paid in 2013;

Showing a mix of sources and evidencing different approaches in institutions



APCs for Different OA Journal “Types”

Year	OA journals – published by ‘non- subscription publishers’ (mean)	Full-OA journals – published by ‘subscription publishers’ (mean)	Hybrid journals – published by ‘subscription publishers’ (mean)
2010	£1,141	£1,154	£1,842
2011	£1,281	£1,148	£1,905
2012	£1,227	£1,121	£1,873
2013	£1,106	£1,152	£1,857
2014	£1,068	£1,216	£1,799
5-year mean	£1,136	£1,164	£1,849

OA journal “types” identified by Björk & Solomon (2014)
applied to current dataset;
Demonstrates marked APC price differential between hybrid
and fully-OA titles



Top-10 Publishers

Publisher	Articles in fully-OA journals	Articles in hybrid journals	Number of APC payments (%)
Elsevier	12	1019	1031 (20.1)
Wiley	17	763	780 (15.2)
Public Library of Science	575	-	575 (11.2)
Oxford University Press	78	292	370 (7.2)
BioMed Central	231	-	231 (4.5)
Nature Publishing Group	120	110	230 (4.5)
Springer	-	224	224 (4.4)
BMJ	51	149	200 (3.9)
Taylor & Francis	-	139	139 (2.7)
American Chemical Society	-	130	130 (2.5)
Other	113	1119	1232 (24)
Total	1197	3945	5142 (100)

Top-10 publishers in terms of number of APCs received;
Received 76% of the APCs paid;
Demonstrating ‘traditional’ publishers capturing a significant
part of the market

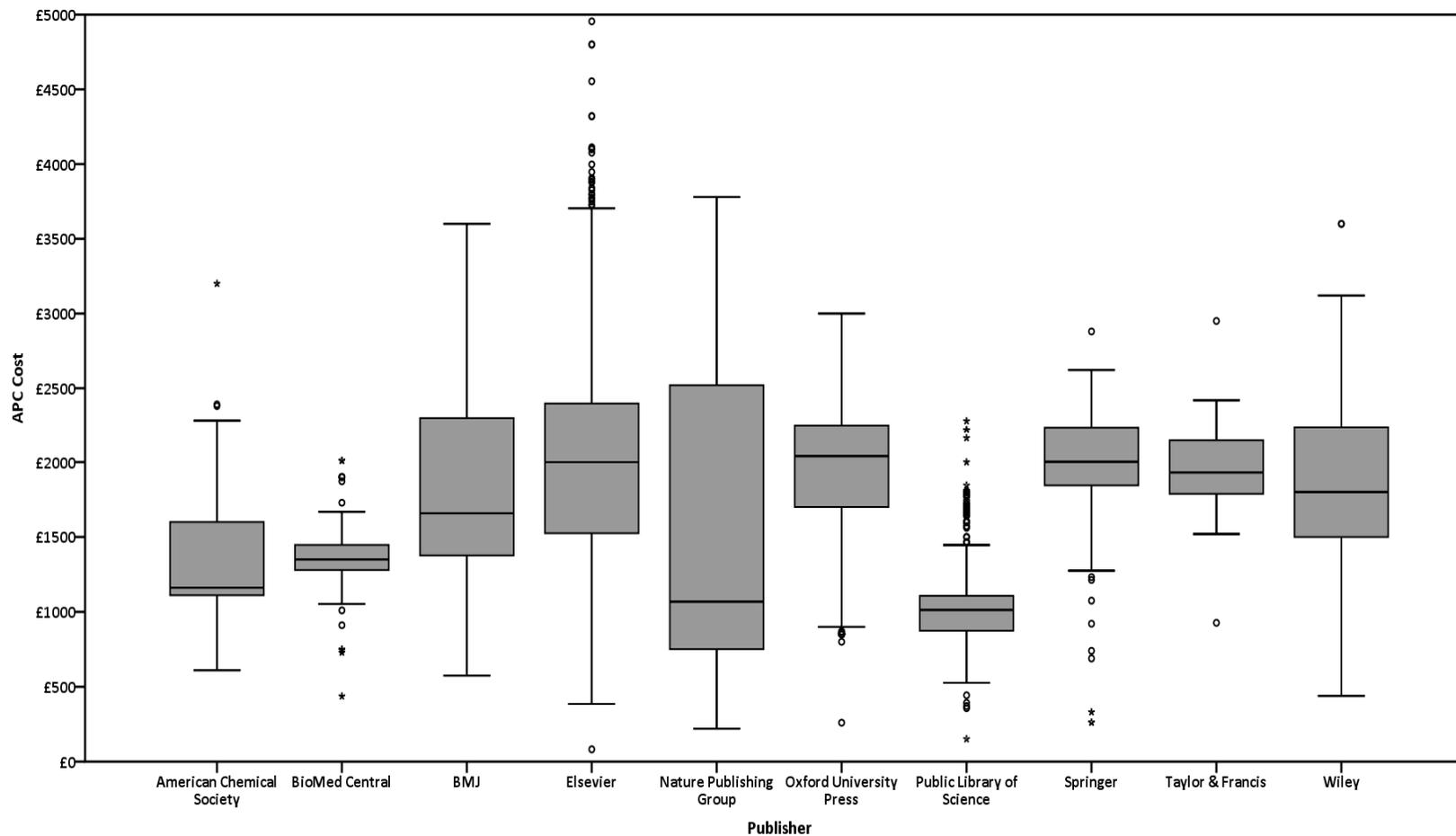
APC Variation Within Publishers

Publisher	Mean	Minimum	Maximum	Range
American Chemical Society	£1,339	£610	£3,200	£2,590
BioMed Central	£1,358	£437	£2,010	£1,573
BMJ	£1,767	£574	£3,600	£3,026
Elsevier	£2,060	£82	£4,955	£4,873
Nature Publishing Group	£1,646	£220	£3,780	£3,560
Oxford University Press	£1,892	£260	£3,000	£2,740
Public Library of Science	£1,104	£151	£2,280	£2,129
Springer	£1,923	£262	£2,880	£2,618
Taylor & Francis	£1,963	£927	£2,950	£2,023
Wiley	£1,868	£439	£3,600	£3,161

Range of APCs charged by the top-ten publishers in terms of numbers of APC payments received for 2013;
Shows wide variation



APC Variation Within Publishers



Range of APCs charged by the top-ten publishers in terms of numbers of APC payments received for 2013;
Shows variable median APC levels



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Subscription Costs

- Better understood
- But still lack of transparency in the market
- Big Deals and individual subscriptions
- Variable levels depending on pricing models

Administration Costs

- Set up costs – very variable
- Ongoing costs – varied per APC from £66-£665
 - Many costs at present communication and advocacy rather than administration as such:
 - “...it is the uncertainty of authors and the queries they generate that take up the vast majority of time”
- If activity rose most institutions reported they would need additional resource
- There was little consistency in the way costs were being handled or in the long-term plans to absorb them in the library budget
- Uncertainty about whether they are long-term additional costs and about how to calculate them led to the decision not to include them in the TCP modelling



Total Cost of Publication

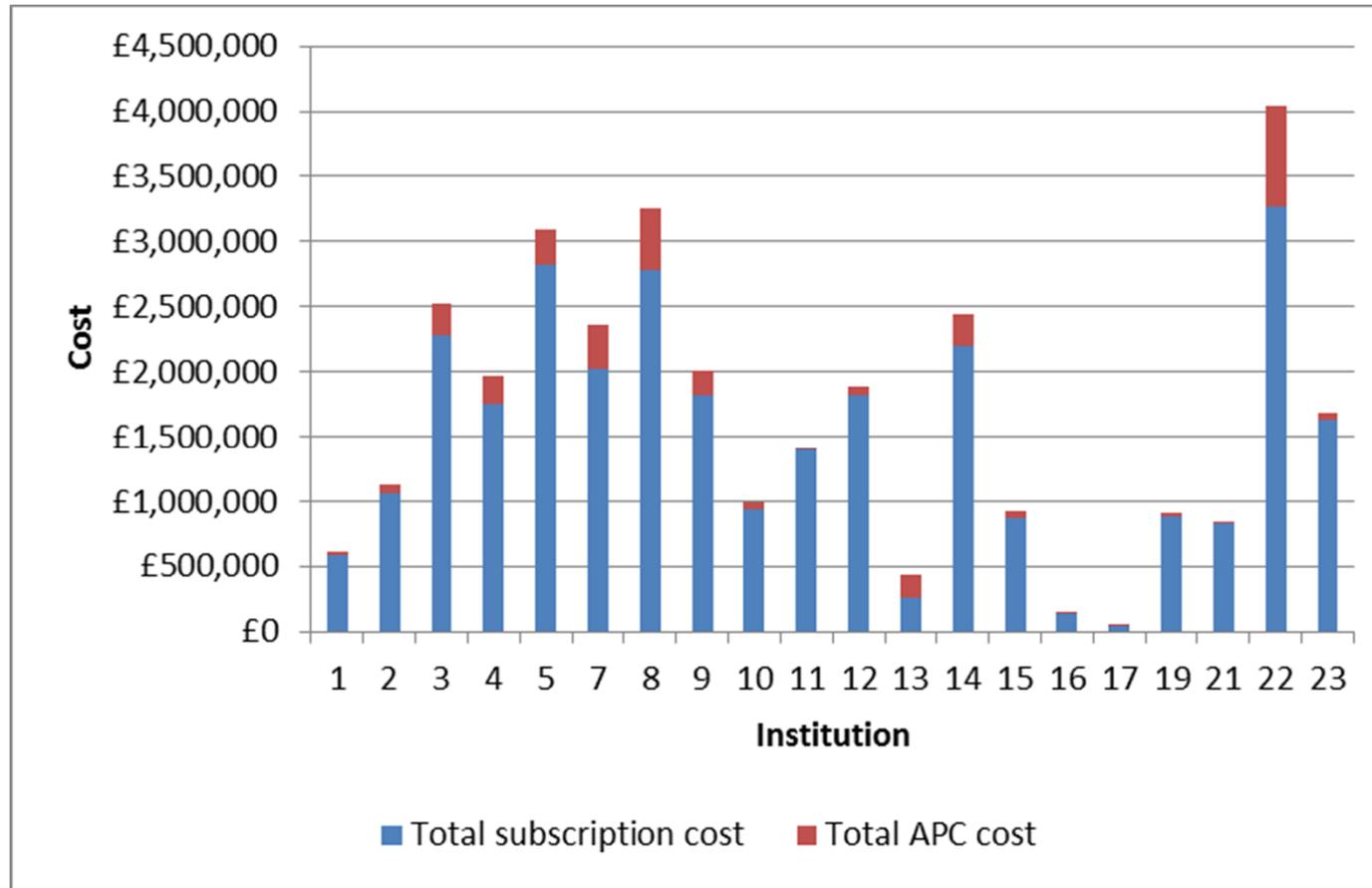
- TCP modelling for subscriptions and hybrid-journal APCs for 20 HEIs
- 2013 APCs and 2013-14 subscriptions
- APCs 10% of TCP (excluding admin. costs)

Institution	Total Subscription Costs (%)	Total APC Costs (%)	Total Cost
1	£578,708 (94%)	£34,186 (6%)	£612,894
2	£1,053,260 (93%)	£73,777 (7%)	£1,127,037
3	£2,274,060 (90%)	£242,601 (10%)	£2,516,661
4	£1,756,783 (89%)	£206,404 (11%)	£1,963,187
5	£2,816,456 (91%)	£275,148 (9%)	£3,091,604
7	£2,025,761 (86%)	£332,363 (14%)	£2,358,124
8	£2,781,917 (85%)	£473,557 (15%)	£3,255,474
9	£1,815,342 (91%)	£189,200 (9%)	£2,004,542
10	£934,655 (95%)	£54,165 (5%)	£988,820
11	£1,403,884 (99%)	£10,209 (1%)	£1,414,093
12	£1,821,589 (96%)	£68,078 (4%)	£1,889,667
13	£264,492 (61%)	£170,246 (39%)	£434,738
14	£2,194,903 (90%)	£239,940 (10%)	£2,434,843
15	£865,998 (93%)	£63,678 (7%)	£929,676
16	£139,168 (95%)	£6,691 (5%)	£145,859
17	£44,875 (72%)	£17,603 (28%)	£62,478
19	£887,186 (97%)	£23,421 (3%)	£910,607
21	£829,924 (98%)	£18,444 (2%)	£848,368
22	£3,271,535 (81%)	£763,602 (19%)	£4,035,137
23	£1,631,646 (97%)	£49,366 (3%)	£1,681,012
Totals	£29,392,142 (90%)	£3,312,679 (10%)	£32,704,821



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Total Cost of Publication



TCP modelling for subscriptions and hybrid-journal APCs for 20 HEIs;
APCs 10% of TCP (excluding admin. costs)

TCP Applied to Publishers

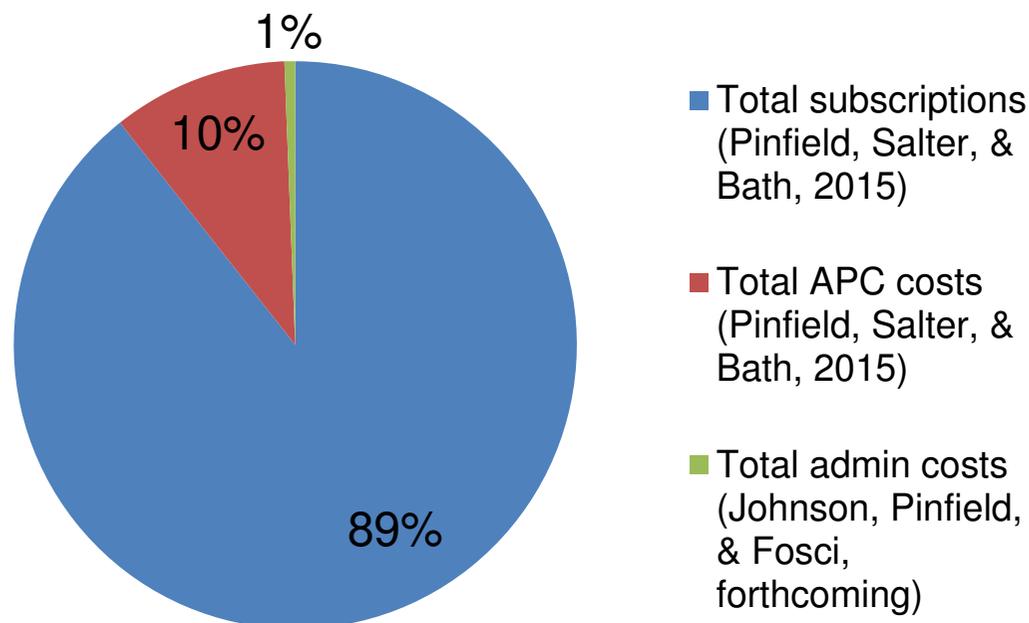
Publisher	Total subscription (%)	Total APCs (%)	Total
Elsevier	£14,259,959 (94%)	£937,531 (6%)	£15,197,490
Wiley	£5,541,996 (89%)	£684,593 (11%)	£6,226,589
Springer	£3,171,977 (94%)	£190,332 (6%)	£3,362,309
Taylor & Francis	£1,168,350 (90%)	£133,511 (10%)	£1,301,862
Nature Publishing Group	£940,496 (85%)	£160,864 (15%)	£1,101,360
Oxford University Press	£660,463 (69%)	£294,924 (31%)	£955,386
Total	£25,743,242 (91%)	£2,401,755 (9%)	£28,144,996

TCP modelling for publishers covering subscriptions and hybrid-journal APCs for 20 HEIs (selected from the top-10 publishers by subscription income who also had over £100,000 income from APCs); Publishers now have a significant income stream in APCs

Completing the TCP Calculation

- Recent work by Research Consulting (led by Rob Johnson) has produced robust APC administration cost estimates*
- These have been refined for publication by Johnson, Pinfield & Fosci (forthcoming):
- **Average cost of APC processing: £88 per article**

* Research Consulting. (2014). *Counting the costs of open access*. Nottingham: Research Consulting. Prepared on behalf of London Higher and SPARC Europe.
<http://www.researchconsulting.co.uk/wp-content/uploads/2014/11/Research-Consulting-Counting-the-Costs-of-OA-Final.pdf>



Costs for the 2,347 articles in the TCP calculations (for the 20 HEIs):

- Subscriptions: £29,392,142 (89%)
- APCs: £3,312,679 (10%)
- **APC administration: £206,536 (1%)**

Total Cost of Publication: £32,911,357

APC Data Collection: Recommendations

- Name of institution
- Date of APC payment: giving the full date so that analysis can be carried out across different time periods (e.g. calendar years and fiscal years)
- Amount of APC payment (including and excluding purchase tax): in the local currency and payment currency
- Funding source for the APC: including internal as well as external funding
- Whether the APC payment is part of a pre-payment scheme
- Publisher
- Journal title
- ISSN
- First author
- Article title
- DOI
- Publication year
- Institutions may wish to include
 - date of application (as well as date of payment)
 - faculty or departmental affiliation of the author(s)
- Funding agencies may wish to include
 - grant number
 - licence terms



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'Hidden' Costs

- APCs paid outside the Centre of HEIs
 - Work by Pinfield & Middleton (forthcoming); and Pinfield, Salter & Bath (2015)
- Colour and page charges – also not usually centrally coordinated

Conclusions & Recommendations (1)

- APCs now a considerable proportion of TCP
- APC payments from central university budgets have risen sharply since 2012
- They are likely to continue to rise for the foreseeable future
- Mostly due to policy and funding changes in the UK, including RCUK's
- Mean cost of APCs paid by institutions has remained relatively stable since 2008 (£1,682)
- Considerable variation in APC prices over the period, prices ranging from £82 to £5,280
- Even within single publishers, considerable variation in APC prices
- Marked price difference between fully-OA journals and hybrid journals

Conclusions & Recommendations (2)

- Commercial publishers producing mostly hybrid journals have captured a large proportion of the APC market
- APC payments normally funded from block grants but some internal institutional funding
- Average APC administration cost £88 per article
- On average, APCs account for 10%, APC administration 1%, subscriptions 89% of the TCP
- Considerable variation between institutions in approach and levels of activity
- Need for continued and standardised data collection (within and between countries) to create a robust evidence base to help create greater transparency in the market and inform decision making
- APCs paid non-centrally and other charges need to be included in future calculations and negotiations



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Questions and Comments

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Box Plot Definition for this Study

- The bold line in each box represents the median (second quartile) value
- The bottom and top of each box represents the first and third quartiles respectively
- The distance between these represents the inter-quartile range
- Whiskers represent the lowest datum still within 1.5 IQR of the lower quartile, and the highest datum still within 1.5 IQR of the upper quartile (Tukey boxplot)
- Small circles (○) representing outliers and asterisks (*) extreme values