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## **PASTEUR4OA: Revealing the true costs of Gold OA- Towards a public data infrastructure of scholarly publishing costs**

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### **Abstract**

This briefing paper presents the current state of financial opacity in scholarly journal publishing. It describes what information is needed in order to obtain a bigger, more systemic picture of financial flows, and to understand how much money is going into the system, where this money comes from, and how these financial flows might be adjusted to support different kinds of publishing models.

This document aims to shed light on following questions: What do we currently know about the costs of open access publishing? Which factors contribute to the current opacity in the market? Which approaches are taken to foster financial transparency of Gold OA? And what are recommendations to funders, institutions, researchers and publishers to increase transparency?

### **Introduction**

“Reducing the costs of readership while increasing access to research outputs” has been a rallying cry for open access publishing (‘gold’ open access, or Gold OA).<sup>1</sup> One main way to finance Gold OA is through article processing charges (APCs), which were promoted by the influential ‘Finch-Report’ and afterwards implemented into various funding policies. APCs mean that “rather than many institutions repeatedly buying access to the same material [...], publishing is paid for “up front” by the research community and

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<sup>1</sup> Another way of providing open access to research is by archiving work in repositories (‘green’ open access). Because the economics of green open access are significantly different, it won't be regarded in this paper.



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## PASTEUR4OA: Revealing the true costs of Gold OA- Towards a public data infrastructure of scholarly publishing costs

thereafter free for all forever”<sup>2</sup>. APCs have become a common financing model to replace subscription fees.<sup>3</sup>

The idea to reduce costs of readership lies at the very heart of academia. During the “serials crisis”<sup>4</sup> subscription costs for digital journal articles rose dramatically despite the possibility to distribute this work at almost no additional costs. Librarians at some of the world’s wealthiest institutions have announced that they can no longer afford<sup>5</sup> to purchase the materials their researchers need. Leading academics have organised **boycotts**<sup>6</sup>, petitions<sup>7</sup> and mass resignations<sup>8</sup> to protest the combination of prohibitively high prices for subscriptions and profit margins of publishers running at 35-40% and rivalling those of the big oil, pharmaceutical and technology firms.

As the public purse continues to invest in Gold OA, it is important to map the costs of current publication models.<sup>9</sup> Yet, the Gold OA market is largely opaque. Data on both the costs of subscriptions and of APCs are hard to gather. If they can be obtained, they only offer partial but very different insights into the market. This is a problem for efficient open access publishing – preventing funders and the research community from making evidence-based decisions on how and where to publish articles openly.<sup>10</sup> Funders, institutions, and individual researchers are increasingly concerned that a transition to Gold OA will not shrink publication costs – but instead will perpetuate oligopolistic<sup>11</sup> and dysfunctional<sup>12</sup> market structures

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<sup>2</sup> See also the ‘Finch-Report’: Accessibility, sustainability, excellence: how to expand access to research publications. Report of the Working Group on Expanding Access to Published Research Findings. Available at: <https://www.acu.ac.uk/research-information-network/finch-report>

<sup>3</sup> The Potential Role for Intermediaries in Managing the Payment of Open Access Article Processing Charges (APCs): Available at: <http://www.acces-deschis.ro/documente-descriere/modele-de-business-apc/45-potential-role-for-intermediaries-in-managing-tharticle-processing-charges-apcs-1?path=modele-de-business-apc>

<sup>4</sup> <http://www.lib.washington.edu/scholpub/facts/economics>

<sup>5</sup> <https://www.theguardian.com/science/2012/apr/24/harvard-university-journal-publishers-prices>

<sup>6</sup> <https://www.theguardian.com/science/2012/apr/09/frustrated-blogpost-boycott-scientific-journals>

<sup>7</sup> <http://thecostofknowledge.com/>

<sup>8</sup> <http://www.independent.co.uk/news/world/europe/lingua-entire-editorial-team-of-respected-linguistics-journal-resign-en-mass-in-turf-war-over-a6723036.html>

<sup>9</sup> <http://publicaddress.net/9549>

<sup>10</sup> <https://www.jisc.ac.uk/blog/indicators-for-a-competitive-and-efficient-open-access-market-25-apr-2014>

<sup>11</sup> The Oligopoly of Academic Publishers in the Digital Era. Available at:

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0127502>

<sup>12</sup> Developing an Effective Market for Open Access Article Processing Charges. Available at: <https://wellcome.ac.uk/what-we-do/our-work/our-policy-work-open-access>



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## **PASTEUR4OA: Revealing the true costs of Gold OA- Towards a public data infrastructure of scholarly publishing costs**

of subscription-based publishing leaving research community open for exploitative financial practices and preventing effective market coordination.<sup>13</sup> A member of the University of Cape Town concluded: :

*“The absence of coordination and dedicated institutional capacity to engage strategically with where our academics are publishing and what we are paying for makes us particularly vulnerable to exploitative financial practice on the part of the publishing industry.”<sup>14</sup>*

### **Towards a systemic view on the costs of Gold OA**

A more systemic picture of these financial flows could be used to see the effects of recent policies, and fuel our collective imagination about other ways in which scholarly communication could be organised. As well as providing evidence to inform such negotiation processes, a more joined-up picture of how money is spent would give institutions a better sense of the resources available to invest in publishing initiatives and infrastructures which prioritise the interests of researchers and their publics, rather than the returns of shareholders.

This briefing paper aims to shed light on following questions: What do we currently know about the costs of open access publishing? Which factors contribute to the current opacity in the market? Which approaches are taken to foster financial transparency of Gold OA? And what are recommendations to funders, institutions, researchers and publishers to increase transparency? The following sections will address each of these questions.

### **Our current knowledge about the Gold OA market(s)**

The Gold OA market can be roughly divided into full OA journals (financed by APCs or other means) and hybrid OA journals (subscription-based journals giving authors the option to publish selected articles openly)<sup>15</sup>. Studies by funding organisations and individual researchers around the world<sup>16</sup> seek to shed light on the total costs of both types of open access publishing – using different data sources such as APC price lists or crowdsourced expenditure data published by university libraries themselves. Their results show that the APC market is not a single market converging on one price.

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<sup>13</sup> See also: <https://aoasg.org.au/what-are-we-spending-on-oa-publication/>

<sup>14</sup> <https://aoasg.org.au/what-are-we-spending-on-oa-publication/>

<sup>15</sup> Monitoring the Transition to Open Access - A report for the Universities UK Open Access Co-ordination Group: Available at: <https://www.acu.ac.uk/research-information-network/open-access-monitoring>

<sup>16</sup> Studies have been conducted in Germany, the UK, the Netherlands, Australia, and the United States of America. An exemplary study about the costs of papers from Dutch provenance used a sample of articles found on Web of Science, in order to evaluate the total costs of Gold OA. See also: <http://wowter.net/2014/03/05/costs-going-gold-netherlands/>



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## PASTEUR4OA: Revealing the true costs of Gold OA- Towards a public data infrastructure of scholarly publishing costs

An analysis of APC price information collected by Directory of Open Access Journals (DOAJ) shows the wide variation in list prices. APC pricing models include prepaid APCs, discounts on list prices, membership models with upfront payments for all publications, and additional charges such as page count or colour print.<sup>17</sup> Prices can be adapted to an institution's provenance, they vary across journals, and can be paid for bundles – so called 'big deals' – with individual universities – often negotiated on a case-by-case basis.<sup>18</sup>

Studies suggest that established commercial publishers (including Elsevier, Wiley, Springer Nature, etc.) are dominating the APC market in a similar way to their dominance of the subscription market.<sup>19</sup> Their hybrid journals often charge significantly higher APCs than dedicated open access publishers like Public Library of Science (PLOS).<sup>20</sup> The majority of known APCs are paid to hybrid journals. This may also be due to the fact that the majority of high impact journals are subscription journals, now turning towards hybrid OA. There are serious concerns among funding organisations and institutions that hybrid journals might levy APCs while not providing a proportionate decrease in subscription costs – thereby charging researchers twice (so-called "double dipping"). There are different responses to this problem: Some research funders stopped allowing their funds to be spent on hybrid journals.<sup>21</sup> In other cases, alternative payment models are employed to avoid rising costs, including discounts, grants, voucher systems (e.g. Royal Society of Chemistry's Gold4Gold) or reimbursements managed by discipline-specific library consortia (e.g. SCOAP<sup>3</sup>).<sup>22</sup>

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<sup>17</sup> See also: Developing an Effective Market for Open Access Article Processing Charges. Available at: <https://wellcome.ac.uk/what-we-do/our-work/our-policy-work-open-access>. As well as: The "Total Cost of Publication" in a Hybrid Open Access Environment: Institutional Approaches to Funding Journal Article-Processing Charges in Combination with Subscriptions. Available at: <http://dx.doi.org/10.1002/asi.23446>

<sup>18</sup> Evaluating Big Deal Journal Bundles. Available at: <https://www.acu.ac.uk/research-information-network/open-access-monitoring>

<sup>19</sup> The "Total Cost of Publication" in a Hybrid Open Access Environment: Institutional Approaches to Funding Journal Article-Processing Charges in Combination with Subscriptions. Available at: <http://dx.doi.org/10.1002/asi.23446>. Developing an Effective Market for Open Access Article Processing Charges. Available at: <https://wellcome.ac.uk/what-we-do/our-work/our-policy-work-open-access>. The costs of a selection of British universities can be found at: [https://figshare.com/collections/Open\\_financial\\_data\\_on\\_article\\_processing\\_charges\\_APCs\\_/2860717](https://figshare.com/collections/Open_financial_data_on_article_processing_charges_APCs_/2860717); See also: <http://ropengov.github.io/r/2016/06/10/FOI/>

<sup>20</sup> As the Wellcome Trust estimates, APC charges of hybrid journals are sometimes twice as high as full OA journals.

<sup>21</sup> See also: Fair Prices for Article Processing Charges (APCs) in Hybrid Journals: Available at: <http://www.rluk.ac.uk/about-us/blog/the-costs-of-double-dipping/>. See also: <https://wellcome.ac.uk/what-we-do/our-work/our-policy-work-open-access>. See also: <https://gowers.wordpress.com/2014/04/24/elsevier-journals-some-facts/>

<sup>22</sup> Gold4Gold offers a voucher system to balance the costs of subscription and APCs. See also: <http://www.rsc.org/journals-books-databases/librarians-information/products-prices/rsc-gold/> The model developed by SCOAP<sup>3</sup> is based on an international consortium of physical sciences libraries organizing reimbursements between libraries and publishers. <https://scoap3.org/what-is-scoap3/>



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## PASTEUR4OA: Revealing the true costs of Gold OA- Towards a public data infrastructure of scholarly publishing costs

Besides average pricing differences drawn from APC price lists, studies show that the actual prices paid by universities sometimes seems to discriminate unreasonably against universities. Subscription fees and APCs seem to be negotiated between universities and publishers on a case-by-case basis, with unclear and highly diverse pricing among institutions. However, studies by the Wellcome Trust UK and others question the sometimes stark pricing differences, with some institutions paying twice as much as other very similar institutions.<sup>23</sup> These papers propose that negotiation bodies such as library consortia **could lead to better deals** for universities with publishers.<sup>24</sup>

A case study in the UK demonstrates that much APC funding originates from RCUK, who allocate amounts according to past research performance. This raises questions about whether the APC market might reinforce existing inequalities between different institutions and academic disciplines— affecting the ability of researchers from less prestigious institutions and from less well-funded disciplines like social sciences and humanities to publish under Gold OA in relevant venues with high impact. The economics of disciplines like humanities are different from ‘high-cost’ disciplines (STEM). They remain largely unfunded, putting into question whether APCs are a palatable option for them.<sup>25</sup> The Open Library of Humanities therefore developed a collective funding model (Library Partnership Subsidy) for open access publishing in the humanities enabling large-scale open access infrastructures at a far cheaper rate than direct APC charges. In order to finance the open publication of monographs, the Knowledge Unlatched project collects Single Title Fees from many libraries. Because title fees are fixed, the total costs per library decline, as more libraries participate.<sup>26</sup>

### What are the hidden costs of open access publishing

Full transparency would require knowing how much each institution pays to each publisher for each journal, ideally allowing to relate these payments to public funds. The exemplary studies described above are important contributions to our understanding of the Gold OA market, yet they focus on small samples of institutions, and only reflect parts of the full costs. The following section discusses important factors that currently obfuscate financial flows in the Gold OA market. It draws from a recent analysis of the UK market by two of our authors.<sup>27</sup> We are aware that not all of these factors have to be applicable to other national

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<sup>23</sup> Evaluating big deal journal bundles. Available at: <http://www.pnas.org/content/111/26/9425.abstract>

<sup>24</sup> A study discusses the possibilities of library consortia to negotiate prices for member libraries: Negotiating Author Fees for Hybrid OA Journals: Library Consortial Leadership. Available at: <http://www.tandfonline.com/doi/abs/10.1080/01462679.2014.935903>

<sup>25</sup> For example, the Open Library of Humanities proposes a subsidy model financed by an association of libraries. See also: <https://about.openlibhums.org/libraries/>

<sup>26</sup> See also: <http://www.knowledgeunlatched.org/about-round-2/how-round-2-works/>

<sup>27</sup> Opening the Black Box of Scholarly Communication Funding: A Public Data Infrastructure for Financial Flows in Academic Publishing. Available at: <http://dx.doi.org/10.16995/olh.72>



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## **PASTEUR4OA: Revealing the true costs of Gold OA- Towards a public data infrastructure of scholarly publishing costs**

markets. While it omits some details, it aspires to render visible some of the main financial flows – notably the extent of subscription or APC payments, and the actors involved in their payment. Thereby it seeks to widen our understanding of financial transparency and the measures needed to provide us with exact financial data on the costs of OA publishing.

***Institutions have multiple income sources – complicating analyses about the extent of publicly funded Gold OA:*** Universities have several income sources, and funding for subscription costs may come from different sources than APC funding. Institutions may receive specific grants to cover APCs.<sup>28</sup> Teaching grants may be allocated to disciplines with high cost subjects such as STEM disciplines. Events, fundraising, intellectual property exploitation, and university publishing (such as Oxford University Press) also create income for institutions. Whether tuition fees can be regarded public or private income may sometimes be unclear. As the case of the UK market shows, tuition fees for overseas students can be 100% privately sourced in a country, but it is more complex for home and EU students if they are funded by the state-backed loan scheme.<sup>29</sup>

***Institutional financial management may obfuscate the income spent on different publication types:*** It is possible that income and expenditure streams may only be analysed separately, hiding how much expenditure is paid out of the public purse. This depends on how funds are managed inside of institutions. For instance, APC payments can be arranged through dedicated APC funds, central funds or overhead money, managed at the individual, grant, college or faculty level.<sup>30</sup> Institutional budgets may display a library's total serials budget for a given year (such as through the annual collection of library statistics by SCONUL in the UK). Yet, in the case of the UK this figure is not broken down into individual line items to specific publishers. The Australian Research Council (ARC) equally does not require institutions to explicitly report publication costs in their annual reports. This makes it “very challenging to determine which of the costs allocated under ‘Books Subscriptions Datasets’, [etc.] are paid for article processing charges”.<sup>31</sup>

Furthermore articles may be co-authored by researchers from different institutions and different countries. In these situations different funders from different nations can share the costs of APC funding if they have jointly contributed to a research project.

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<sup>28</sup> The Wellcome Trust and RCUK are exemplary for the use of block grants. See also: <http://www.rcuk.ac.uk/media/news/121108/>

<sup>29</sup> For a further discussion on the variety of income sources, see a recent paper by two of our authors: Opening the Black Box of Scholarly Communication Funding: A Public Data Infrastructure for Financial Flows in Academic Publishing. Available at: <http://dx.doi.org/10.16995/olh.72>

<sup>30</sup> See also: <https://www.acu.ac.uk/research-information-network/open-access-monitoring>

<sup>31</sup> See also: <https://aoasg.org.au/what-are-we-spending-on-oa-publication/>



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## PASTEUR4OA: Revealing the true costs of Gold OA- Towards a public data infrastructure of scholarly publishing costs

**Payments by individual researchers may go unreported:** Research undertaken by Stephen Pinfield regarded APC payments at the University of Nottingham paid by single academic researchers from funds which are not managed centrally. The findings indicate that a significant percentage of APCs go unrecorded because they are paid out of individual department or project funds and informally managed.<sup>32</sup>

**Policies mandate the reporting of payments differently:** Different countries have different policies for institutions to report the amounts of subscription fees and APCs paid. In the UK there are no policies mandating payment reports for subscription fees. Yet, major funding organisations such as the Wellcome Trust or RCUK mandate to report APC payments.<sup>33</sup> In Australia, the Council of University Libraries (CAUL) publishes openly statistics of Australia's and New Zealand's university libraries, including expenditures for single serials by each library.

**Funding policies might foreground the payments of some disciplines – while leaving other disciplines in the dark:** A great deal about the APC market is still unknown. Funding by RCUK and the Wellcome Trust addresses predominantly STEM research. Data regarding APC expenditure in humanities and social sciences is scarce. In the UK, the vast majority of humanities research is unfunded – or at least not directly funded.<sup>34</sup> Hence, expenditure clauses potentially cannot measure compliance in disciplines they do not primarily address.

**Non-disclosure clauses prevent transparent cost evaluations:** There is a systematic opacity of payments to publishers which are often object to confidentiality or non-disclosure clauses in contracts.<sup>35</sup> The extent to which this practice goes on is unclear. FOI requests have proven to be a way to shine light on the payments. In many countries the majority of payments to publishers are made by higher education institutions that are partly or fully funded by public money.

**Price lists do not necessarily display real payments:** The individual list price of a journal subscription or an APC – which can usually be easily found on publisher websites – is often not the price that is actually

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<sup>32</sup> The “total cost of publication” in a hybrid open-access environment: Institutional approaches to funding journal article-processing charges in combination with subscriptions. Available at: <http://eprints.whiterose.ac.uk/81227/>

<sup>33</sup> The Potential Role for Intermediaries in Managing the Payment of Open Access Article Processing Charges (APCs): Available at: <http://www.acces-deschis.ro/documente-descriere/modele-de-business-apc/45-potential-role-for-intermediaries-in-managing-tharticle-processing-charges-apcs-1?path=modele-de-business-apc>

<sup>34</sup> It is only indirectly funded, because HEFCE Quality-Related research funding will be indirectly responsible for paying some researchers.

<sup>35</sup> See also: Fair Prices for Article Processing Charges (APCs) in Hybrid Journals. Available at: <http://www.rluk.ac.uk/about-us/blog/the-costs-of-double-dipping/>



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## **PASTEUR4OA: Revealing the true costs of Gold OA- Towards a public data infrastructure of scholarly publishing costs**

paid for access to a title. Real prices may be hidden behind non-disclosure agreements.<sup>36</sup> Around the world individual researchers and funders have crowdsourced actual prices paid by institutions. Comparisons with list prices suggest that the actual costs can be significantly higher than list prices.

***It is difficult to disentangle journal revenue through subscription fees and APCs:*** Hybrid OA journals use a mix of subscription fees and APCs to finance the publication of articles as open access. It is difficult to separate APCs paid per article from subscription fees – especially if these subscription fees are part of big deals (see below).

***Big deals obscure costs:*** Big deals are bundles whereby a library will purchase access to a collection of titles by a publisher for a single sum rather than paying individual subscriptions. Some big deal prices still take into account the amount an institution was paying when it first signed up, which could have been more than 15 years ago. This ‘historical print spend’ calculation leads to some institutions paying far more than others – even institutions of a similar size with a similar library budget – to access the same content.<sup>37</sup>

***Administration costs pose a new financial burden:*** Rising administrative costs have to be added to current cost analyses in order to get an understanding of what some researchers call “the total cost of publication”.<sup>38</sup> Transparency, reporting, quantification and ‘audit rituals’ shift management and governance in higher education, whose members often complain of the crippling explosion of administrative rituals in addition to excessive teaching loads and diminishing research time.<sup>39</sup> At the same time governments adopt financial transparency as a key element to pursue austerity in public finances – to increase pressure on public institutions to cut costs and increase efficiency gains.<sup>40</sup> Any calls for greater transparency must be balanced against risks and unexpected consequences for researchers, institutions and other actors in the scholarly communication system.

### **Best practices to increase financial transparency of Gold OA**

There is rising momentum within the larger research community – including funders, institutions and institutional libraries – to mitigate the current lack of financial data around open access publishing. The

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<sup>36</sup> Negotiating Author Fees for Hybrid OA Journals: Library Consortial Leadership. Available at:

<http://dx.doi.org/10.1080/01462679.2014.935903>

<sup>37</sup> Opening the Black Box of Scholarly Communication Funding: A Public Data Infrastructure for Financial Flows in Academic Publishing.

Available at: <http://dx.doi.org/10.16995/olh.72>.

<sup>38</sup> Ibid.

<sup>39</sup> See also: Power (1999): *Audit Society: Rituals of Verification*. Oxford: Oxford University Press; McGattigan (2013): *The Great University Gamble: Money, Markets, and the Future of Higher Education*. Davies (2014): *The Limits of Neoliberalism: Authority, Sovereignty and the Logic of Competition*.

<sup>40</sup> David Cameron’s Transparency Revolution? The Impact of Open Data in the UK. Available at: <http://dx.doi.org/10.2139/ssrn.2361428>. See also: *Towards a Genealogy of Open Data*. Available at: <http://dx.doi.org/10.2139/ssrn.2605828>



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## **PASTEUR4OA: Revealing the true costs of Gold OA- Towards a public data infrastructure of scholarly publishing costs**

British Research Information Network (RIN) states in a recent report that financial sustainability for universities is one key indicator for successful transition to Gold OA.<sup>41</sup> It further elaborates that “aggregate data should be gathered annually from a stratified sample of universities on their expenditure on APCs and other publication charges, and the numbers of articles for which they have been paid.”<sup>42</sup>

A stakeholder meeting supported by Jisc and convened by RIN developed a set of indicators to enable monitoring the UK’s transition to open access. These indicators include counts and proportions of articles and journals that are open access as well as expenditures on article processing charges (APCs) and subscriptions.

Some funding bodies insert reporting clauses in their funding policies to gain a better picture how their funds are spent. For instance, the Wellcome Trust UK and the Research Councils UK (RCUK) provide block grants to institutions in order to pay for APCs. Institutions must report back APC expenditures in order to enable funding bodies to monitor compliance with their policies. The UK’s higher education infrastructure body, Jisc, has worked with RCUK to create a template for institutions to report their block grant APC expenditure in a standardised way and release it openly.<sup>43</sup> Data is available from 26 institutions for 2014, and 15 institutions covering the period 2013-15.

Alternatively, funders and institutional associations start to create databases collecting the amount of money paid through APCs to single journals. The goal is to make this data accessible to a larger public. The Wellcome Trust published<sup>44</sup> details how much it spent on open access publishing each year from 2010 to 2014.<sup>45</sup> In a similar vein, the Alliance of Science Organisations in Germany, supported among others by the Helmholtz Association, called for institutions to join the “Open APC Initiative”. The initiative aims to publicly disclose money spent by institutions on APCs using a platform to aggregate data on APC costs. The goal is “to demonstrate how reporting on fee-based Open Access publishing can be made more transparent and reproducible across institutions”.<sup>46</sup> The ESAC project functions as a hub supporting the publication of payment agreements as well as procedures and platforms (such as Open APC) to share and aggregate cost information and to allow empirical statements on average prices and price developments.<sup>47</sup>

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<sup>41</sup> Monitoring the Transition to Open Access - A report for the Universities UK Open Access Co-ordination Group: Available at: <https://www.acu.ac.uk/research-information-network/open-access-monitoring>

<sup>42</sup> Ibid.

<sup>43</sup> APC data collection: <https://www.jisc-collections.ac.uk/Jisc-Monitor/APC-data-collection/>

<sup>44</sup> See more datasets at: [https://figshare.com/authors/Robert\\_Kiley/401934](https://figshare.com/authors/Robert_Kiley/401934)

<sup>45</sup> [https://figshare.com/articles/Wellcome\\_Trust\\_APC\\_spend\\_2012\\_13\\_data\\_file/963054](https://figshare.com/articles/Wellcome_Trust_APC_spend_2012_13_data_file/963054)

<sup>46</sup> See also: <https://wisspub.net/2014/11/07/offenlegung-von-open-access-publikationsgebuehren-in-deutschland/>

<sup>47</sup> See also: <http://esac-initiative.org/offsetting-under-construction/>



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## PASTEUR4OA: Revealing the true costs of Gold OA- Towards a public data infrastructure of scholarly publishing costs

### Recommendations and conclusion

There is rising awareness and evidence within research communities about the costs of open access publishing. However, our insights remain limited because most data are limited to few samples and displays incomplete or inaccurate information. This is a problem for efficient open access publishing – preventing funders and the research community from making evidence-based decisions on how and where to publish articles openly. Based on the findings proposed in this paper the following steps may be taken to improve our understanding of the financial effects of Gold OA costs, to gather a more joined-up picture of how money is spent, and to fuel our collective imagination about other ways in which scholarly communication could be organised.

**Funders** may insert reporting and disclosure clauses in funding policies, addressing both subscription payments and APC charges at a micropayment level (costs per article). Non-disclosure agreements are detrimental to an objective evaluation of publication costs. Legal measures to prevent such agreements – including restricting funds to publishers refraining from non-disclosure agreements – may mitigate these.

**Funding organisations, institutions and individual researchers** should increase (inter)national research activities on the topic. Research may employ existing data sources 1) to deepen our understanding of current market mechanisms, 2) to identify new cost factors, necessary data representing them, and factors rendering them currently opaque, 3) and to analyse the benefits of alternative payment models for specific disciplines and institutions (including subsidies organised by consortia, etc.). Research should reflect the many forms of rising administration costs – and give recommendations on how the benefits of data disclosure can be balanced against rising administrative constraints.

**Institutions, funding organisations and individual researchers** can deliver evidence by disclosing their payments in databases accessible by everyone. If other institutions follow their model - this allows for public comparisons of actual payments. This enables us to detect unreasonable pricing discrimination and cases where publishers do not comply with open access funding policies, and stimulates further research. Furthermore institutions could analyse internal payment procedures and adopt payment procedures that enable to capture the costs of individual article charges per publisher.



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## PASTEUR4OA: Revealing the true costs of Gold OA- Towards a public data infrastructure of scholarly publishing costs

### Further Information

#### Market analyses of the subscriptions and Gold OA markets

- Opening the Black Box of Scholarly Communication Funding: A Public Data Infrastructure for Financial Flows in Academic Publishing. Available at: <http://dx.doi.org/10.16995/olh.72>.
- The Oligopoly of Academic Publishers in the Digital Era. Available at: <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0127502>
- Evaluating Big Deal Journal Bundles. Available at: <https://www.acu.ac.uk/research-information-network/open-access-monitoring>
- Negotiating Author Fees for Hybrid OA Journals: Library Consortial Leadership. Available at: <http://dx.doi.org/10.1080/01462679.2014.935903>
- A scoping study of the “total costs” of Gold OA in the Netherlands. See also: <http://wowter.net/2014/03/05/costs-going-gold-netherlands/>
- The “Total Cost of Publication” in a Hybrid Open Access Environment: Institutional Approaches to Funding Journal Article-Processing Charges in Combination with Subscriptions. Available at: <http://dx.doi.org/10.1002/asi.23446>

#### Selected funder recommendations for an effective Gold OA market

- Developing an Effective Market for Open Access Article Processing Charges. Available at: <https://wellcome.ac.uk/what-we-do/our-work/our-policy-work-open-access>
- Monitoring the Transition to Open Access - A report for the Universities UK Open Access Co-ordination Group: Available at: <https://www.acu.ac.uk/research-information-network/open-access-monitoring>
- Fair Prices for Article Processing Charges (APCs) in Hybrid Journals: Available at: <http://www.rluk.ac.uk/about-us/blog/the-costs-of-double-dipping/>
- Accessibility, sustainability, excellence: how to expand access to research publications. Report of the Working Group on Expanding Access to Published Research Findings (Finch-Report): <https://www.acu.ac.uk/research-information-network/finch-report>

#### Publicly available data on APC and subscription costs

- The costs of a selection of British universities can be found at: [https://figshare.com/collections/Open\\_financial\\_data\\_on\\_article\\_processing\\_charges\\_APCs\\_/2860717](https://figshare.com/collections/Open_financial_data_on_article_processing_charges_APCs_/2860717); See also: <http://ropengov.github.io/r/2016/06/10/FOI/>
- Cambridge APC payments for RCUK 2013 -14. See also: [https://figshare.com/articles/Cambridge\\_APC\\_payments\\_for\\_RCUK\\_2013\\_14/987118](https://figshare.com/articles/Cambridge_APC_payments_for_RCUK_2013_14/987118)
- University of Edinburgh payments <http://www.ariadne.ac.uk/issue70/andrew>
- APC charges paid by the Wellcome Trust UK: [https://figshare.com/articles/Wellcome\\_Trust\\_APC\\_spend\\_2012\\_13\\_data\\_file/963054](https://figshare.com/articles/Wellcome_Trust_APC_spend_2012_13_data_file/963054)
- <https://wisspub.net/2014/11/07/offenlegung-von-open-access-publikationsgebuehren-in-deutschland/>
- <https://aoasg.org.au/what-are-we-spending-on-oa-publication/>

#### Selected alternative financial models

- Gold4Gold offers a voucher system to balance the costs of subscription and APCs. See also: <http://www.rsc.org/journals-books-databases/librarians-information/products-prices/rsc-gold/>
- The model developed by SCOAP<sup>3</sup> is based on an international consortium of physical sciences libraries organizing reimbursements between libraries and publishers. <https://scoap3.org/what-is-scoap3/>
- Knowledge unlatched seeks to enable the publication of monographs: <http://www.knowledgeunlatched.org/about-round-2/how-round-2-works/>



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- The Open Library of Humanities proposes a subsidy model financed by an association of libraries. See also: <https://about.openlibhums.org/libraries/>