

Title	Analysis of the Publication Costs of the Austrian Science Fund (FWF) in 2015
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Analysis of the Publication Costs of the Austrian Science Fund (FWF) in 2015

Introduction

This report provides information about the Austrian Science Fund (FWF) costs spent on publications through the programmes “Peer Reviewed Publications” and “Stand-Alone Publications” in the year 2015. The FWF pursues the idea of making publication costs – especially Open Access (OA) publication costs - more transparent, in order to create a collaborative overview of evolving global publication market prices.

After the Wellcome Trust, the FWF was one of the first funders to share its publication cost data online in 2013 (see [FWF dataset 2013](#)), and continued with this approach in 2014 (see [FWF dataset 2014](#)). The dataset from 2015 is available at [Figshare](#) and [Zenodo](#), and is licensed under CC BY.

Executive summary

The data presented in this report can be summarised by the following key findings:

- Hybrid open access continues to have the highest cost share among publications funded by the FWF in 2015. Aiming towards a full transition to Gold Open Access and overcoming the current disruptive publication market (see [Max Planck Society initiative](#)), the FWF agreed to offsetting deals with various publishers to avoid double-dipping. That means article processing charges (APCs) spent by the FWF are offset against Austrian library subscriptions.
- Five big publishers have the highest cost share of the FWF article output. This outcome reflects the familiar subscription-based system in which only a few publishers dominate the scholarly publication system.
- The analysis of the Gold Open Access data of the Wellcome Trust together with the FWF data reveals a worrying fact: journal article prices for Gold Open Access are currently rising, which again mirrors the already familiar rising subscription market prices. To avoid this situation Open Access stakeholders need to act now and establish publication alternatives.

FWF Funding Programmes

The programme “**Peer-Reviewed Publications**” aims to cover the costs of peer-reviewed publications that result from projects supported by the FWF, up to a limit of three years after the conclusion of the project. For projects that were granted FWF funding before November 1st 2014, the following conditions are applicable:

- Up to EUR 3,000.00 for journal articles and similar peer-reviewed publication formats (upon consultation with the FWF, exceptions may be made in certain cases)
- Up to EUR 8,000.00 for monographs, complete collections and proceedings, but only for projects approved before November 30th, 2011

For all projects funded after November 1st 2014, the following conditions are applicable:

Gold Open Access: The FWF covers a maximum of EUR 2,500.00 per article in addition to the project budget. If the APC are higher, authors can either consider an alternative journal, use the budget of a running FWF project, or use other resources (e.g. cost-sharing with co-authors) to cover the differences.

Hybrid Open Access: The FWF covers a maximum amount of EUR 1,500.00 per article in addition to the project budget. If the APCs are higher, authors might consider an alternative journal/publisher or choose Green Open Access (see I./3.), or authors are free to use the budget of a running FWF project or other resources (e.g. cost-sharing with co-authors) to cover the differences.

Other Costs: Additional costs for publications in subscription venues which are not related to Open Access (e.g. page charges, colour figures, submission fees) are no longer eligible for funding.

The purpose of the programme “**Stand-Alone-Publications**” is the promotion of stand-alone scientific publications in order to make them available to the wider public. The following grants are applicable for conventional publication forms (e.g. monographs, collections):

- A lump-sum grant in the amount of up to EUR 14,000.00 for production, simultaneous open access publication and editing
- A lump-sum grant in the amount of up to EUR 18,000.00 for production, simultaneous open access publication and foreign language editing or translation
- A lump-sum grant of up to EUR 18,000.00 for production costs relating to innovative publication formats, including foreign-language editing or translation and open access publication
- An additional grant of up to EUR 8,000.00 for translation into English if it is strongly suggested in the reviews that an English publication would raise the visibility considerably. It is not necessary to apply for this grant.

For all projects funded from 2015 onward:

- the programme “Stand-Alone Publications” is extended to new digital Open Access publication formats, such as apps, wiki platforms, databases etc. (funding up to EUR 18,000.00). For this funding programme, publishers are invited to certify their peer review procedure.
- the Creative Commons Licence CC BY is compulsory for all publication formats whenever the FWF has covered the costs.

Types of Publications: OA Articles, OA Monographs & Other OA, Non-OA Publication Costs

Through the programmes “Peer-Reviewed Publications” and “Stand-Alone Publications”, the FWF supports different types of publications. For this analysis, these publication types were categorised in *OA Journal Articles*, *OA Monographs & Other OA* and *Non OA Publication Costs*, and their share of the total FWF publication costs were examined. The categories were filtered along Open Access or no Open Access. Publications attached with “not paid for OA” are viewed as no Open Access.

In 2015, 75% of the publication costs were spent on *OA Journal Articles*. The percentage share of *OA Monographs & Other OA*, which comprises monographs, collected volumes and proceedings, is 21%, whereas *Non Open Access Publications Costs*¹ – which are made up of page charges, colour charges and submission fees – make up only 5% of the total costs. Overall, 95% of all costs were spent on Open Access, and thus similar to 2014 the majority of publications funded by the FWF in 2015 are Open Access available.

In the dataset of 2015 the category “not paid for OA” was included and indicates that an article for which the FWF did not pay OA costs is indeed Open Access (through Green OA, Cost Sharing or other). It can be shown that by adding up Open Access items and “not paid for OA” items 98% of the funded publications are Open Access available and only 2% are not.

Publication type	No. Items	total spend	%
OA Journal Articles	1236	€ 2.799.414,09	74,7%
OA Monographs & Other OA	84	€ 775.177,76	20,7%
Non OA Publication Costs	139	€ 175.190,29	4,7%
	1459	€ 3.749.782,14	100,0%

Table 1: Types of Publications: OA Articles, OA Monographs & Other OA, Non-OA Publication Costs

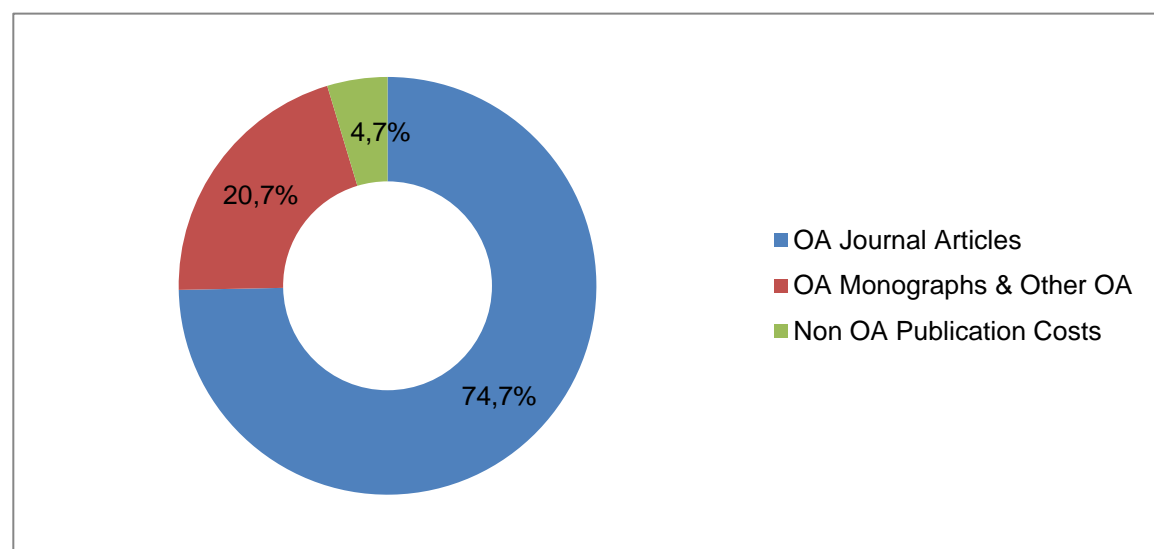


Figure 1: Types of Publications 2015

¹ Publications that are Open Access but for which the OA costs were not covered through the FWF are also included among Non OA Publication Costs.

Share of Disciplines: Life Sciences, Natural Sciences, Social Sciences & Humanities

For an overview of the cost shares of the different FWF funded scholarly disciplines, a classification into three groups was made: Life Sciences, Natural Sciences and Social Sciences & Humanities. In 2015, 47% of the total publication costs were used for funding publications in the Life Sciences, followed by the Social Sciences & Humanities with 28% and the Natural Sciences with 25%. Publications in the Life Sciences exceeded the number of articles of other disciplines. Compared to the data from 2014, a slight rise of articles in the Life Sciences can be seen.

Discipline	No. Items	total spend	%
Life Sciences	810	€ 1.772.356,23	47,3%
Natural Sciences	500	€ 1.057.137,31	28,2%
Social Sciences & Humanities	149	€ 920.288,60	24,5%
	1459	€ 3.749.782,14	100,0%

Table 2: Share of Disciplines: Life Sciences, Natural Sciences, Social Sciences & Humanities

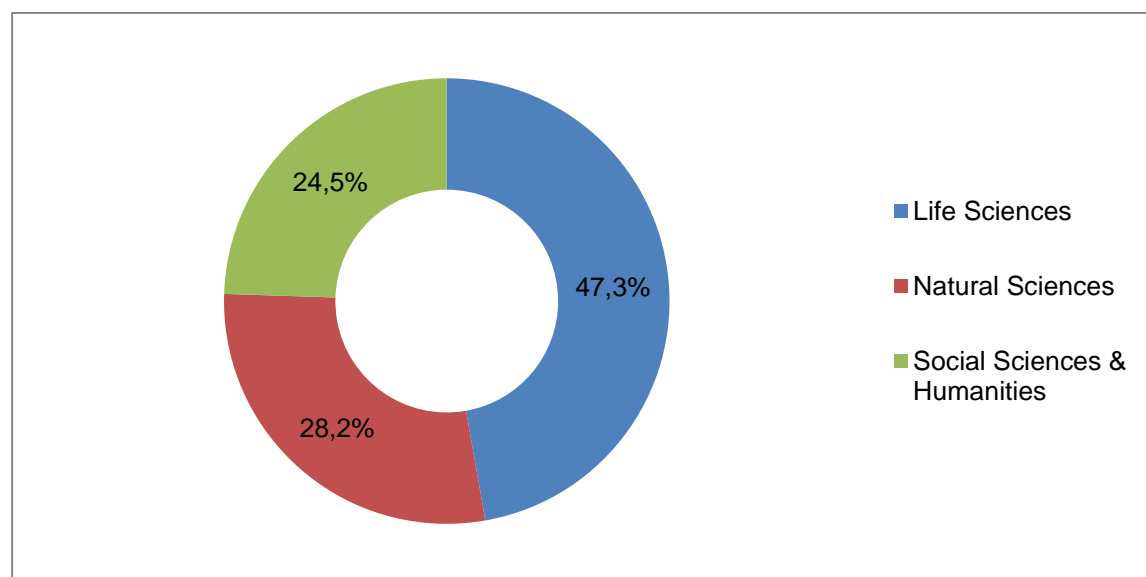


Figure 2: Share of Disciplines 2015

Use of Licences

The FWF requests the [Creative Commons Attribution](#) licence (CC BY) for funded publications. This licence allows others to copy, re-use and distribute the licensed material, in whole or in part, following the licence norms.

In 2015, 76% of the funded publications² complied with the FWF Policy and were published under the Creative Commons Attribution licence. This number exceeds the number from 2014 by 13% and shows the continuing trend towards the use of the CC BY licence. This trend is primarily a result of a clause which is included in the Open Access deals that the FWF negotiated with several publishers and which states that publications must have a CC BY licence attached. This is in accordance with the [New Science Europe Principles on Open Access Publisher Services](#), which state that an attached open licence which ensures the copyright of the authors is one of the minimum expected services of publishers. While the use of the CC BY licence increased between 2013 and 2015, the number of articles without a licence continues to decrease, from 16% in 2014 to 12% in 2015.

	2013	2014	2015
CC BY*	26,6%	62,6%	75,8%
CC BY NC	1,9%	5,8%	3,0%
Other CC Licence	7,3%	15,9%	9,5%
n/a	64,3%	15,6%	11,7%
	100,0%	100,0%	100,0%

Table 3: Use of Licences: 2013 – 2015

*percentages in the table are rounded

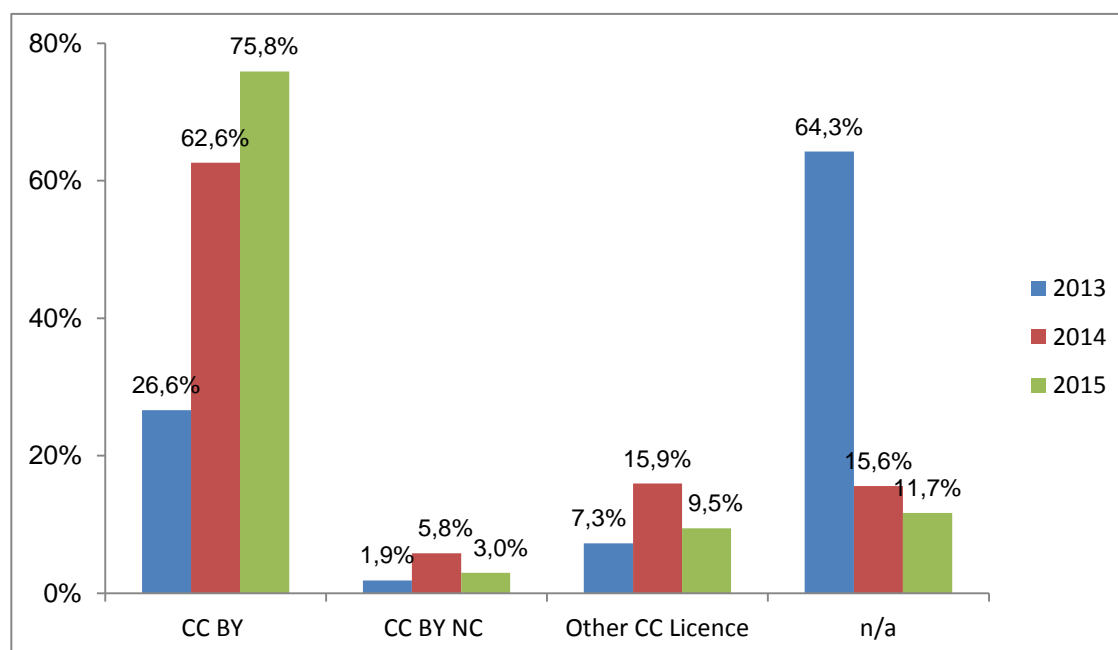


Figure 3: Use of Licences – Comparison 2013 - 2015

² Only Open Access publications funded through the programme “Peer-Reviewed Publications” are taken into account, so that they can be compared to the ones from previous years. Items with “not paid for OA” are not taken into account.

Gold, Hybrid and Other Costs

The programme “Peer Reviewed Publications”³ supports Gold Open Access, Hybrid Open Access and Other Costs. The analysis of the datasets from the years 2013, 2014 and 2015 reveals the continued high share of Hybrid Open Access costs, which constitute the major part of “Peer-Reviewed Publications” cost items.

Compared to 2014, the total amount for Hybrid Open Access costs rose from EUR 1.8 million to EUR 2.4 million and Gold Open Access from EUR 0.3 million to EUR 0.4 million. However, the number of Other Costs did not decrease but continued to be around EUR 0.3 million.

In 2014, the FWF and the Austrian Academic Library Consortium agreed on Open Access deals with the publishers IOP Publishing, Royal Society of Chemistry, Taylor and Francis, Sage and Springer. These deals are in line with the Max Planck Society’s “[OA2020 – The Initiative](#)” which is aiming towards a full transition to Gold Open Access and which is strongly supported by the [Austrian Science Fund](#).

	2013	2014	2015
Gold OA	10,8%	13,1%	13,6%
Hybrid OA	85,8%	73,3%	77,5%
Other Costs	3,4%	13,6%	8,9%
	100,0%	100,0%	100,0%

Table 4: Gold, Hybrid und Other Costs

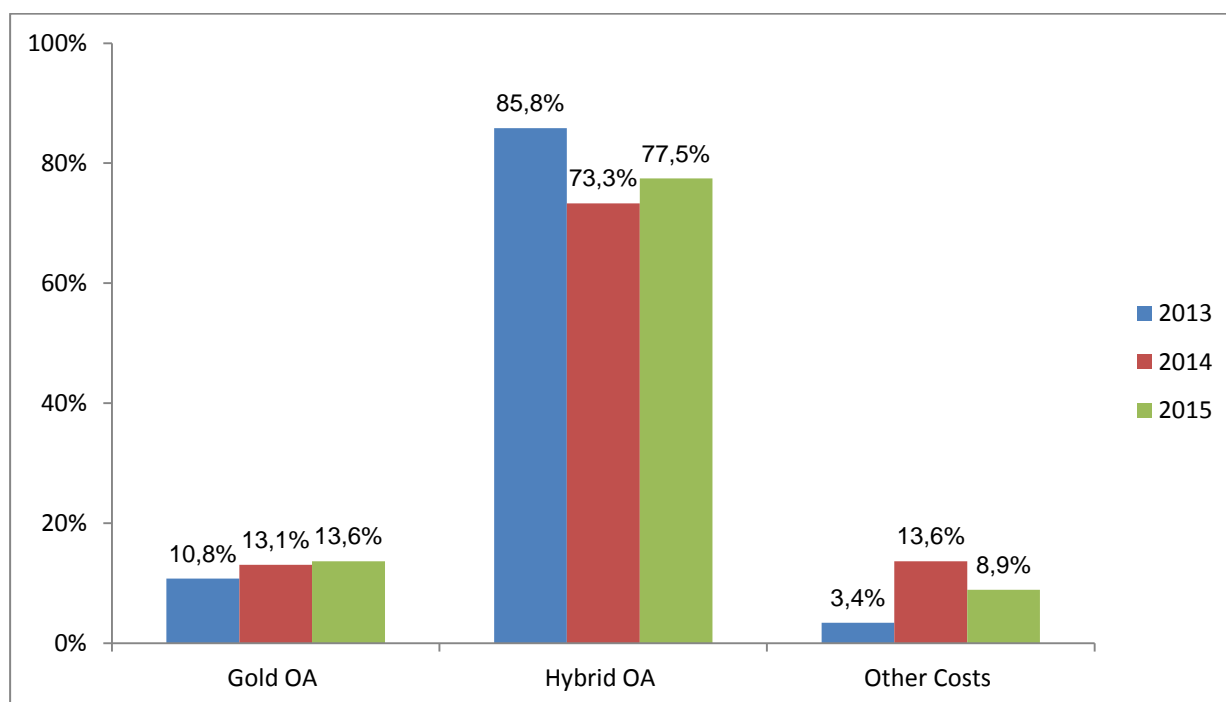


Figure 4: Gold, Hybrid and Other Costs: Comparison 2013-2015

³ Only Open Access publications funded through the programme “Peer-Reviewed Publications” are taken into account, so that they can be compared to the publications from 2013.

Share of Publishers: Stand-Alone Publications

In 2015, 48 publications were funded through the programme “Stand-Alone Publications”. As seen in the previous years, Böhlau Verlag and Verlag ÖAW account for the most publications and have the highest cost shares. Compared to the data from 2014, funded publications decreased from 62 to 48, which is a result of fewer applications to the programme in 2015.

Compared to the past years, a slight decrease of the share of Austrian publishers can be seen. This is driven by the rise of new Open Access book publishing models in particular and by the internationalisation of publishing in the Humanities in general.

Publisher	No. Items	total spend	%
Böhlau Verlag	17	€ 226.000,00	32,8%
Verlag der österreichischen Akademie der Wissenschaften	9	€ 136.000,00	19,7%
Jan Sramek Verlag	3	€ 50.000,00	7,2%
Other Publishers	19	€ 277.737,00	40,3%
	48	€ 689.737,00	100,0%

Table 5: Share of Stand-Alone Publications 2015

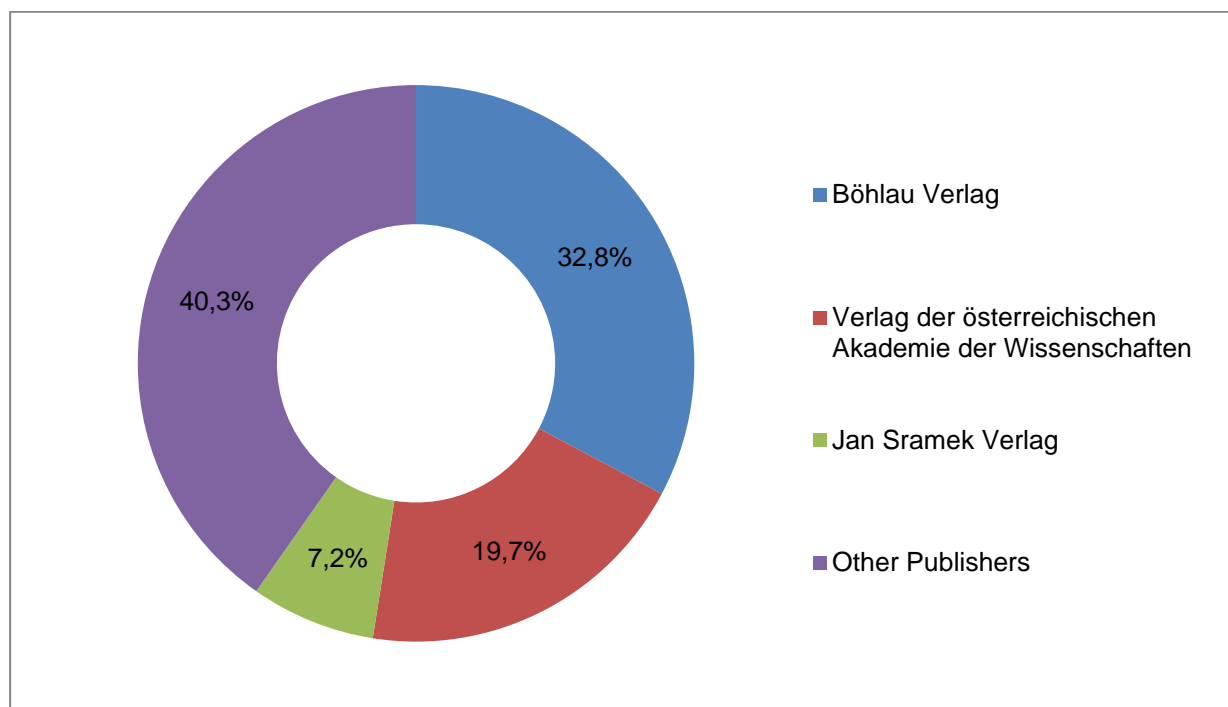


Figure 5: Stand-Alone Publications 2015

Share of Publishers: Peer-Reviewed Publications

This analysis provides an overview of the costs⁴ spent on publications for publishers through the programme “Peer-Reviewed Publications”. The table on the next page shows the top 25 FWF-funded publishers and the costs spent on Gold Open Access, Hybrid Open Access and Other Costs. Elsevier, Wiley-Blackwell and Springer (including Biomed Central) represent the top three FWF-funded publishers in 2015 and altogether make up slightly more than half of the costs spent through the programme “Peer-Reviewed Publications”. Similar to the results from 2014, for all three the total number of Hybrid Open Access costs far exceeds the payments for Gold Open Access and Other costs.

Further, figure 6 shows that four publishers⁵ with a market share of 68% are dominating the costs spent on publications at the FWF, which confirms what Larivière et al. already described in [“The Oligopoly of Academic Publishers in the Digital Era”](#).

Note: The costs for Hybrid OA paid by the FWF for articles published in 2015 with IOP Publishing and Taylor & Francis are offset against subscription and licence fees paid by the Austrian Library Consortium for access to IOP’s and Taylor & Francis journals.

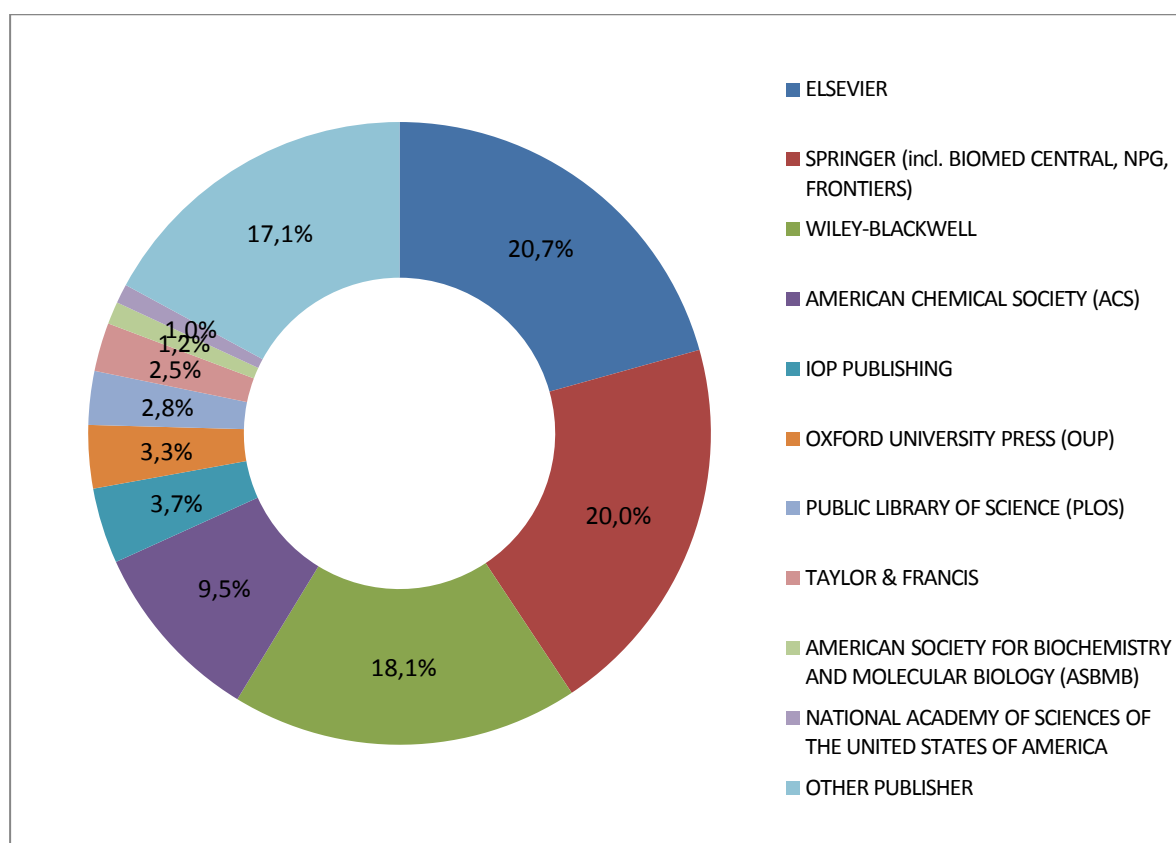


Figure 6: Top 10 Publishers and Others: Peer Reviewed Publications

⁴ The numbers shown in this table do not reflect the exact number of publications during 2015; in some cases publishers sent multiple invoices for different item costs.

⁵ For this analysis Springer, Biomed Central, Nature Publishing and Frontiers were counted together.

	Hybrid Open Access			Gold Open Access			Other Publication costs			in total		
Publisher	No. Articles	total spend	average APC	No. articles	total spend	average APC	No. articles	total spend	average APC	No. articles	total spend	average APC
ELSEVIER	240	€ 579.514,49	€ 2.414,64	7	€ 22.478,58	€ 3.211,23	28	€ 32.488,88	€ 1.160,32	275	€ 634.481,95	€ 2.307,21
WILEY-BLACKWELL	156	€ 486.205,05	€ 3.116,70	6	€ 12.321,60	€ 2.053,60	43	€ 55.232,52	€ 1.284,48	205	€ 553.759,17	€ 2.701,26
SPRINGER (incl. BIOMED CENTRAL)	115	€ 297.602,00	€ 2.587,84	37	€ 63.937,08	€ 1.728,03	7	€ 7.457,63	€ 1.065,38	159	€ 368.996,71	€ 2.320,73
AMERICAN CHEMICAL SOCIETY (ACS)	92	€ 291.654,20	€ 3.170,15							92	€ 291.654,20	€ 3.170,15
NATURE PUBLISHING GROUP (NPG) (incl. FRONTIERS)	32	€ 111.415,93	€ 3.481,75	73	€ 99.764,93	€ 1.366,64	21	€ 33.349,74	€ 1.588,08	126	€ 244.530,60	€ 1.940,72
IOP PUBLISHING	31	€ 75.338,64	€ 2.430,28	19	€ 32.501,42	€ 1.710,60	6	€ 4.406,22	€ 734,37	56	€ 112.246,28	€ 2.004,40
OXFORD UNIVERSITY PRESS (OUP)	26	€ 69.278,88	€ 2.664,57	2	€ 5.112,00	€ 2.556,00	15	€ 26.227,20	€ 1.748,48	43	€ 100.618,08	€ 2.339,96
PUBLIC LIBRARY OF SCIENCE (PLOS)				63	€ 85.439,57	€ 1.356,18				63	€ 85.439,57	€ 1.356,18
TAYLOR & FRANCIS	37	€ 72.484,30	€ 1.959,04	1	€ 1.806,00	€ 1.806,00	5	€ 3.136,35	€ 627,27	43	€ 77.426,65	€ 1.800,62
AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY (ASBMB)	10	€ 18.175,90	€ 1.817,59				14	€ 17.514,24	€ 1.251,02	24	€ 35.690,14	€ 1.487,09
NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA	14	€ 21.988,64	€ 1.570,62				6	€ 8.612,60	€ 1.435,43	20	€ 30.601,24	€ 1.530,06
AMERICAN PHYSICAL SOCIETY (APS)	10	€ 18.312,57	€ 1.831,26	2	€ 3.519,10	€ 1.759,55	9	€ 7.882,87	€ 875,87	21	€ 29.714,54	€ 1.414,98
MDPI				23	€ 28.604,51	€ 1.243,67				23	€ 28.604,51	€ 1.243,67
VERLAG DER ÖSTERREICHISCHEN AKADEMIE DER WISSENSCHAFTEN (ÖAW)	4	€ 25.980,00	€ 6.495,00							4	€ 25.980,00	€ 6.495,00
AMERICAN SOCIETY FOR MICROBIOLOGY (ASM)	3	€ 5.054,43	€ 1.684,81	1	€ 2.967,75	€ 2.967,75	7	€ 13.523,62	€ 1.931,95	11	€ 21.545,80	€ 1.958,71
AMERICAN GEOPHYSICAL UNION (AGU)	5	€ 17.121,87	€ 3.424,37				3	€ 3.123,08	€ 1.041,03	8	€ 20.244,95	€ 2.530,62
COPERNICUS PUBLICATIONS				19	€ 20.127,87	€ 1.059,36				19	€ 20.127,87	€ 1.059,36
THE ROYAL SOCIETY	7	€ 17.054,61	€ 2.436,37				2	€ 1.763,36	€ 881,68	9	€ 18.817,97	€ 2.090,89
IMPACT JOURNALS LLC	7	€ 18.145,55	€ 2.592,22							7	€ 18.145,55	€ 2.592,22
AMERICAN INSTITUTE OF PHYSICS (AIP)	8	€ 16.042,91	€ 2.005,36	1	€ 974,12	€ 974,12	3	€ 957,86	€ 319,29	12	€ 17.974,89	€ 1.497,91
OPTICAL SOCIETY OF AMERICA (OSA)	3	€ 4.403,67	€ 1.467,89	9	€ 13.400,11	€ 1.488,90				12	€ 17.803,78	€ 1.483,65
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)	9	€ 13.031,92	€ 1.447,99	1	€ 1.938,85	€ 1.938,85	1	€ 529,41	€ 529,41	11	€ 15.500,18	€ 1.409,11
ROYAL SOCIETY OF CHEMISTRY (RSC)	12	€ 15.432,91	€ 1.286,08							12	€ 15.432,91	€ 1.286,08
SOCIETY FOR NEUROSCIENCE	5	€ 10.786,76	€ 2.157,35				2	€ 2.972,38	€ 1.486,19	7	€ 13.759,14	€ 1.965,59
AMERICAN METEOROLOGICAL SOCIETY (AMS)	4	€ 11.757,52	€ 2.939,38				1	€ 881,84	€ 881,84	5	€ 12.639,36	€ 2.527,87
OTHER PUBLISHERS	80	€ 174.665,07	€ 2.183,31	22	€ 20.050,26	€ 911,38	42	€ 53.593,77	€ 1.276,04	144	€ 248.309,10	€ 1.724,37
In total	910	€ 2.371.447,82	€ 2.605,99	286	€ 414.943,75	€ 1.450,85	215	€ 273.653,57	€ 1.272,81	1411	€ 3.060.045,14	

Table 6: Share of Publishers Peer Reviewed Publications 2015

A large number of publishers still request additional author fees for subscription-based journals (e.g. colour figures, page charges and submission fees). The average price per Other Publication costs per article continues to increase, from EUR 1,074 in 2013 to EUR 1,191 in 2014 and EUR 1,273 in 2015. With the new Open Access Policy in place, the FWF has decided to cease covering these cost items for projects funded after November 1st, 2014. Since most of the publications in 2015 were the result of projects that were approved before November 1st, 2014 the price caps did not yet apply.

Outlook: An APC-based Open Access System is not Enough

Finally, we would like to describe how the market and prices in the APC-based Gold Open Access system develop. In order to work with a more significant dataset, we merged our data with the dataset of the [Wellcome Trust/Charity Open Access Fund](#) and analysed Gold Open Access prices per publisher and market shares of publishers.

Publisher	total spend	No. articles	average APC
PUBLIC LIBRARY OF SCIENCE (PLOS)	€ 506.589,73	334	€ 1.516,74
BIOMED CENTRAL	€ 381.705,26	204	€ 1.871,10
ELSEVIER	€ 169.151,50	55	€ 3.075,48
FRONTIERS RESEARCH FOUNDATIO	€ 147.173,78	118	€ 1.247,24
NATURE PUBLISHING GROUP (NPG)	€ 145.178,58	81	€ 1.792,33
OXFORD UNIVERSITY PRESS (OUP)	€ 79.940,92	44	€ 1.816,84
BMJ	€ 73.261,77	39	€ 1.878,51
WILEY-BLACKWELL	€ 39.461,51	21	€ 1.879,12
MDPI	€ 35.335,56	27	€ 1.308,72
IOP PUBLISHING	€ 27.593,66	17	€ 1.623,16
OTHER PUBLISHERS	€ 174.532,76	119	€ 1.466,66
In total	€ 1.779.925,03	1059	€ 1.680,76

Table 7: Wellcome Trust and FWF Open Access Gold Data

In 2015, the Public Library of Science (PLOS) led the list of Gold Open Access publishers, followed by Biomed Central and Elsevier. For a further analysis, the data of the SpringerNature members (Springer, Biomed Central, Nature Publishing Group, Frontiers) were merged. Figure 8 shows the high share of SpringerNature (38%) in the Gold Open Access publishing market and – as already predicted in the FWF data report last year – it can be expected that SpringerNature will take up the leading Gold Open Access market position. Compared to the FWF data from 2014, the average price per Gold Open Access article increased from EUR 1,288 to EUR 1,682. These data show that even if a full Open Access publishing system based on APCs is achieved, we will still face the same situation as in the current subscription system: The prices will increase and it is very likely that in 10 to 15 years two or three commercial giants will not only dominate the publication market but the entire academic workflow as well.

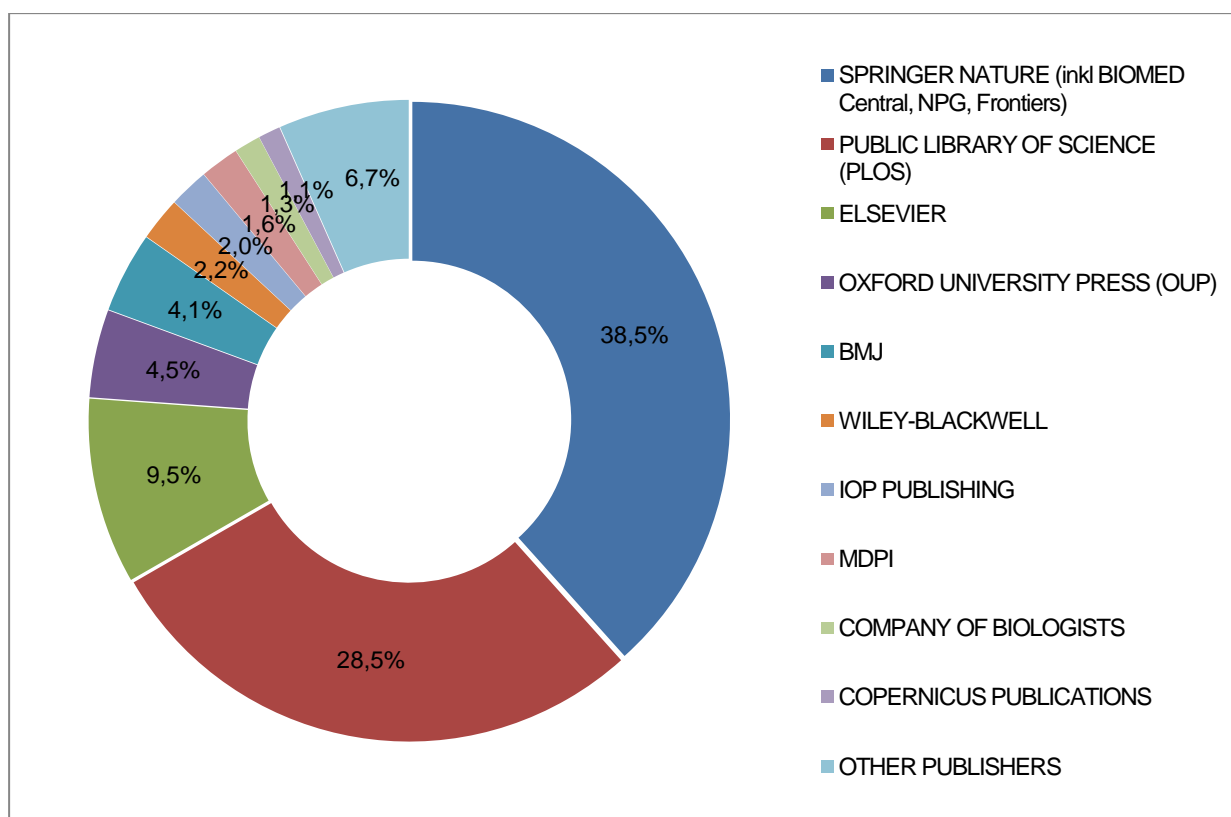


Figure 7: Gold Open Access: Market shares of publishers

Thus, for a functional market in the future, increased competition is necessary. More investment in alternative Open publication models from public and private funding bodies is needed in order to avoid a price increase in the future.

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