Dear readers,

it is an essential task of the ZBW to organise and provide knowledge. The ZBW strongly advocates Open Science, i.e. the opening up of the science system and in particular the Open Access transformation, in order to ensure free access to scientific publications.

The reality in academic life is that research findings are often not available in Open Access, that in the domain of research data management the principles enabling sharing, findability or reusability of research data are not spread widely enough, and that the transfer of knowledge from research into politics and society still offers huge potential for improvement.

The importance of establishing Open Science is demonstrated by the current COVID-19 crisis that affects society worldwide. Scientific publishers have recognised the resulting pressure for opening up, but also the potential resulting benefit. Publications are no longer relevant from a scholarly perspective only; there is a huge societal benefit in providing access to them early. The same applies to datasets that scientists increasingly provide for reuse. These allow, for instance, to assess which age groups are particularly affected or how the disease progresses in different cases. As the COVID-19 crisis shows, the debate concerning the organisation of knowledge, and here especially the debate around Open Science, is fundamental because it impacts our lives deeply and is significant far beyond the scientific world. Open Science is valuable and beneficial!

The ZBW actively participates in and shapes the international Open Science discourse. This is what the ZBW highlights illustrate.

All aspects of the ZBW’s development were constructively and critically discussed with the Advisory Board in 2019. The various perspectives coming together in the Advisory Board of the ZBW are reflected in the high quality of the results. The Foundation Council, as the central supervisory board, also has addressed these themes intensively and made important directive decisions for the development towards a “digital ZBW”. We are deeply indebted to our Advisory Board and Foundation Council for the trust we have met with in 2019. We also express our gratitude towards ZBW staff and their continuous high-level engagement for the service performance and further development of the ZBW.

Enjoy the read!

Klaus Tochtermann, Thorsten Meyer, Axinia Braunisch

Kiel/Hamburg, May 2020
“A highlight of enthusiasm, dedication, team spirit, and prosperous environment. I like to think that 100 years from now the same spirit and environment will provide someone else the privilege to report on the importance and role of this institution.”

Fidan Limani,
Research assistant
Innovative Information Systems and Publishing Technologies, Programme Division Digital Information Infrastructures
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The ZBW sets national and international benchmarks for modern information provision in economics.
MISSION

The **ZBW** is a national information infrastructure institution. In this capacity, it is committed to the reliable, comprehensive and sustainable supply of economic information to the economic research community. This encompasses the maintenance and enlargement of its unique collections, the provision of easy and innovative means of access to these collections, and excellence in the user and service orientation of the **ZBW**.
271 employees from 12 countries
9,661,839 downloads of digital full-texts
1,199,176 digitally preserved media items
9,744 retrodigitised volumes
171 cooperations with national and international universities and research institutions
99 presentations at national and international conferences
41 publications in national and international professional media
18 ongoing third-party funded projects
41 supervised final theses
896,993 social media views
271 employees from 12 countries
9,661,839 downloads of digital texts
1,199,176 digitally preserved media items
9,744 retrodigitised volumes
171 cooperations with national and international universities and research institutions
99 presentations at national and international conferences
41 publications in national and international professional media
18 ongoing third-party funded projects
41 supervised final theses
896,993 social media views

ZBW 2019 IN FIGURES
ZBW Highlights from 2019

ZBW Advisory board welcomes new members:

In January, the term of office ended for three members of the ZBW Advisory Board, including the chair. The newly appointed members are Professor Stefan Bender, Professor Wilhelm Hasselbring and Professor Karen Gedenk. The new chair is Professor Jürgen Schupp of the Socio-economic Panel (SOEP) at the German Institute for Economic Research (DIW) in Berlin (photo).

In January 2019, the Leibniz Research Alliance Science 2.0 changed its name to Open Science:

Since 2012, the “Leibniz Research Alliance Science 2.0” has been active in researching the effects of using participatory tools and platforms of the internet on research and publishing behaviour. At the beginning there was a strong focus on social media, but research priorities at the ZBW and the Alliance have shifted more and more towards Open Science. Therefore the Alliance decided to rename itself and adopted a new strategy in 2019.

ZBW supports cooperation between digitisation centres in Germany:

The ZBW aims to support retrodigitisation efforts in Germany and to link up digitisation centres. For this purpose, the ZBW initiated a series of events in cooperation with TIB and ZB MED. The first workshop addressed “Boutique versus mass digitisation – organisational forms of digitisation centres”.

Open Science Conference 2019 in Berlin discussed Open Science in practice:

The ZBW and the Leibniz Research Alliance Open Science hosted the International Open Science Conference in Berlin in March 2019. 220 participants from Europe, Africa and the Americas discussed how Open Science is practised in concrete daily work routines.

K10plus – a joint database with 200 million entries:

Since March 2019, the ZBW has been recording its data in the database K10plus. K10 stands for the ten federal states involved in the project, the “plus” stands for individual libraries such as the Berlin State Library. K10plus is operated by the Library Service Centre Baden-Württemberg (BSZ) and the Head Office of the Common Library Network (VZG). The database contains nearly 200 million bibliographic entries.

Academic Career Kit: In March 2019, a new service expressly aimed at Early Career Researchers in economics went online.

The Academic Career Kit offers support in many aspects of scholarly work: finding a suitable journal for a first publication, publishing in Open Access, recognising predatory journals, handling social media and networking within the research community, measuring impact, managing and sharing research data.

More than 100 international guests at INCONECSS:

The second international conference for libraries in the domain of economic information “INCONECSS – International Conference on Economics and Business Information” brought together librarians, information professionals and researchers from 33 countries and 5 continents.
Demand for ZBW writing guide exceeds all expectations:

More than 40,000 copies of the brochure “Write your best paper” have been distributed in Germany since June 2019. In addition, an English version has been sent out in December.

EconBiz bundles information about authors:

EconBiz Author Profiles merge information about authors from different Linked Open Data sources at a single point. The beta service went online in September 2019.

ZBW receives certificate berufundfamilie:

On 25 June 2019 Federal Minister for Family Affairs, Dr Franziska Giffey, honoured institutions that pursue future-oriented ways of enabling employees to balance work and family life. The certificate “berufundfamilie” is granted for three years, and the berufundfamilie Service GmbH conducts annual checks to verify progress.

ZBW participates in proposals of consortia for building the National Research Data Infrastructure

The ZBW is involved in the proposals for two consortia representing economics in the planned National Research Data Infrastructure: KonsortSWD und BERD@NFDI.

ZBW donates historical data to Wikidata:

More than 5,000 digitised dossiers about historical figures from the ZBW press archives have been made available under CC0 licence at Wikidata in October 2019.

ZBW receives CoreTrustSeal for cogent digital preservation:

The ZBW has now successfully concluded the third certification process in 2019, after the Data Seal of Approval in 2015 and the nestor Seal in 2017. The ZBW is the first institution in Germany to qualify for all three certifications.

Findings from Web Science project cited at “NatureIndex”:

The joint project “OASE” of GESIS – Leibniz Institute for the Social Sciences and ZBW established that articles published first as preprints are cited and shared online much more often than those not submitted as preprints. The study findings have been cited in “NatureIndex”, a database operated by Nature Research which offers an up-to-date overview of high-quality research findings and cooperation at institutional, national and regional levels.

Third-party funds for collection preservation:

The state Schleswig-Holstein provides funds for collection preservation at the ZBW. 50,000 euros are assigned for the deacidification of books from the core collection area, and for journals and yearbooks where the ZBW has unique holdings in Germany.

“Semantic Web in Libraries” brings together more than 170 participants from 26 countries:

The eleventh international conference “Semantic Web in Libraries”, co-hosted by the ZBW and the North Rhine-Westphalian Library Service Centre since 2009, welcomed participants from Europe, Asia, Africa and North America, as well as many who followed proceedings via livestream.

GO FAIR office networks data and infrastructure experts from 21 countries in 2019:

The GO FAIR office organised numerous workshops in Germany and Europe, bringing together international stakeholders from Australia, Austria, Belgium, Brazil, Czech Republic, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, UK and USA.
One hundred years of ZBW

LOOKING BACK AT THE ANNIVERSARY YEAR

Photo: Sven Wied

On 1 February 2019, the ZBW celebrated its 100th birthday with national and international guests.

More images: 100years.zbw.eu
CEREMONY
2019 was an anniversary year for the ZBW. On 1 February 2019, the ZBW celebrated its one hundredth birthday and now looks back on one hundred years of library history (100jahre.zbw.eu). The official ceremony was opened with an address from Professor Matthias Kleiner, President of the Leibniz Association. Greetings were also offered by Daniel Günther, Minister President of Schleswig-Holstein, Dr Peter Tschentscher, First Mayor of the Free and Hanseatic City of Hamburg, Dr Philipp Steinburg, head of the economic policy department at the Federal Ministry for Economic Affairs, and Dr Ulf Kämpfer, mayor of the state capital Kiel. In his celebratory address, Professor Klaus Tochtermann expressed his gratitude to all the generations of ZBW staff during the past hundred years; and then he cheerfully looked ahead at the years to come that the currently active generation can shape. The ZBW director also opened the travelling exhibition “Open UP! How digitisation changes science”.

1 → Professor Matthias Kleiner, President of the Leibniz Association
2 → Dr Peter Tschentscher, First Mayor of the Free and Hanseatic City of Hamburg
3 → Dr Ulf Kämpfer, Mayor of the State Capital Kiel
Professor Klaus Tochtermann, Director of the ZBW, launches the travelling exhibition “Open UP!”

Daniel Günther, Minister President of the state Schleswig-Holstein
Beside the international ZBW conferences – Open Science Conference, INCONECSS and Semantic Web in Libraries – the ZBW hosted two events which discussed the future of academic libraries. On 19 February 2019, a panel discussion on “Digital Librarian” reflected on the changing professional profile. The topic on 21 October 2019 was “Libraries 2050”. Audio documentations can be found at the anniversary website 100years.zbw.eu.

1 → Professor Isabella Peters (ZBW), Professor Dirk Lewandowski (HAW Hamburg), Gabriele Fahrenkrog (J&K – Agentur Jöran und Konsorten) and Professor Hans-Christoph Hobohm, University of Applied Sciences Potsdam. Moderator: Nicole Clasen (ZBW).
2 → Professor Isabella Peters
3 → Professor Dirk Lewandowski and Nicole Clasen
On 12 March 2019, the ZBW hosted a symposium in Berlin on the topic “Digital economics – challenges and opportunities”. The programme was jointly devised by the ZBW, the German Academic Association for Business Research (VHB), the German Economic Association (VIS) and the German Data Forum (RatSWD).

1 → Joachim Winter, Professor at LMU Munich
2 → Lively debate during the symposium “Digital economics – challenges and opportunities”
Pictured: Dr Karolin Herrmann, Managing Director of the Verein für Socialpolitik
3 → Professor Nicola Fuchs-Schündeln, Goethe University Frankfurt and Chair of the Managing Board of the Verein für Socialpolitik
On the occasion of the ZBW anniversary, the ZBW presented a travelling exhibition under the title “Open UP! How digitisation changes science”. The exhibition aimed to present relevant background information about Open Science and to explain the ZBW’s ongoing work as an information infrastructure. The target groups on the one hand were insiders of the science system, such as researchers in economics, academic partners in cooperation and research projects, libraries and funders. On the other hand, the ZBW addressed non-scientific visitors who got a chance to look behind the scenes of the science system and how it works, to learn more about the path of research findings to a scholarly article, the measuring of scientific output or the management of research data.

The exhibition travelled from the ZBW in Kiel to the Grimm Centre in Berlin, the Deutsches Museum in Munich and back to the ZBW in Hamburg. In 2020, it will be on loan at the Hochschule der Medien in Stuttgart, the Leibniz University in Hanover, the Institute for Advanced Studies (IHS) in Vienna and the University of Applied Sciences Dresden.

More information at: www.100years.zbw.eu/openup
For its 100th anniversary, the ZBW also developed a special **design celebrating** the future rather than the past. The key visual for all anniversary material symbolised connectivity as a global future trend which, in the context of the ZBW, represents the linking of digital and physical places and media.

During the run-up to its anniversary, the ZBW also gathered all remaining historical artefacts and recorded them according to archival principles. For the first time, the ZBW has an historical archive about its own past at its disposal. The task was undertaken by historian Claudia Thorn who subsequently summed up various aspects of ZBW history in three small volumes: “Erst königlich, dann weltbekannt”, “Persönlichkeiten” and “Ein bibliothekarischer Kreis schließt sich”. These volumes can be downloaded freely at www.100jahre.zbw.eu/geschichte (German)
“First class provision of literature and information – yesterday, today and tomorrow.”

Ann-Kathrin Ulrich
Librarian, Programme Division
Collection Development & Metadata
Digital access to scientific publications would actually be simple without the variety of different licences and payment barriers that often prevent direct access and make open scientific exchange more difficult. That’s why a variety of activists have been working to change this for a few years. On the one hand, there are/were the illegal activities. Aaron Swartz, for example. He published the “Guerilla Open Access Manifesto” in 2008. In this manifesto, he encouraged people to download and distribute paid literature on their own initiative. Hashtag #canihazPDF. Or Alexandra Albakyan and the shadow library called SciHub – a project that has been an integral part of everyday scientific life since it was launched in 2011. The legal projects include the Open Access movement, which not only improves access to research in the short term, but has been fighting for a major cultural change since the Berlin Declaration in 2003. We will take a look at the ZBW Open Access Workshop here.
CREATING ACCESS

Workbench I: Negotiating contracts with publishers

The publication market for scientific literature is currently undergoing a major Open Access revolution. This transformation process aims to establish free access to research results as a standard. Business and licensing models are changing fundamentally and the actors in the scientific system are currently facing major challenges.

According to a study by the European University Association, 95 percent of “big deals” in Europe will expire by the end of 2020 (http://doi.org/10.5281/zenodo.3487127). “Big deals” are major licence agreements for extensive scientific journal packages and are often national in scope. The successors will mainly be offsetting or transformation contracts. In addition to the conventional access rights to scientific journals, the publication fees for Open Access publications will also be covered by authors from the participating scientific institutions.

→ See the diagram on Open Access status:
https://open-access-monitor.de/#/open-access

As an information infrastructure institution for economics, the ZBW actively provides support for and shapes this Open Access transformation and is gradually and consistently developing into a digital hub for freely accessible specialist information in the field of economic sciences. The proportion of publications directly accessible via Open Access across all subject areas is currently just under 20 percent, with the range varying between 7 percent (business studies) and 27 percent (biology) depending on the subject area, and economics being below average overall.

The Open Access transformation of the ZBW is often based on larger licensing projects and national licences. For example, the ZBW licensing team has concluded a complex contract with Edward Elgar Publishing. The publishing programme of this British academic publisher includes, in particular, books in the field of economics, including those by the US Nobel Prize winner Elinor Ostrom.

After the ZBW had already been offering access to the e-book collection by Edward Elgar Publishing up to the publishing year of 2015 on a nationwide basis within the framework of a national licence since 2018, this access will now be gradually expanded each year with funding from the DFG.

“The honest and thoughtful way the licence team at ZBW approached our collaboration and the trust this engendered enabled us to develop an offer that will have far reaching benefits for students, teachers and researchers in Germany. It also increases the visibility and access to our books, something we see as a fundamental part of the service that we provide to our authors in Germany and throughout the world. “

Tim Williams, Managing Director, Edward Elgar Publishing

GLOSSARY

What is an alliance licence?

Alliance licences are a DFG instrument for providing access to scientific literature for all users in Germany. The alliance licences funded from 2011 onwards are the continuation of the national licences funded from 2004 to 2010. In contrast to national licences, which are financed entirely by the DFG, alliance licences have a licensing and financing model in which the participating libraries have to contribute approximately 75 percent of the total costs.
How an offsetting or Read&Publish contract works can be illustrated using the example of the major international publishing house Taylor&Francis, which is based in London. Since 2018, the licence agreement negotiated with the ZBW has enabled all institutes of the Leibniz Association with a focus on economic research to access the publications licensed by the ZBW at Taylor&Francis free of charge. At the same time, authors from these institutes can publish in all journals of the publishing group without the usual additional publication fees on an Open Access basis. In the past two years, 110 scientific articles have been published in this way and are freely accessible.

The successful model is to be expanded to include all Leibniz institutions in the contract which was extended by two years at the beginning of 2020. Cross access is then possible. This means that staff at all Leibniz institutions can use all journals which the respective other institutions subscribe to and can publish in all Taylor&Francis journals with Open Access. The planning horizon includes a national consortium for all scientific institutions in Germany in a third development stage. Here, the ZBW goes beyond the actual supply of literature and functions as the distribution centre of a scientific information infrastructure which is as open as possible.

**Workbench II: Further development of independent specialist portals**

Open access is proven to increase the visibility of science. On average, Open Access publications are cited three times more often by peers. In order to ensure that German economic research output also remains visible on a global basis and that German science is noticed in the USA or Asia too, the ZBW has made a consistent commitment to the transformation and is working towards a digital Open Science infrastructure for economic research with a focus on publication output from German economic research.

Therefore, the topic of openness is not only about access, but also about the associated high level of visibility of freely accessible publications in search engines and specialist databases. It should also be possible to find research on
marginal topics and not only the research mainstream, which is self-reinforcing through Google and Google Scholar. Open access also means the fair curation of information without giving privileged treatment to topics or authors. Here, technical procedures (e.g. search and classification algorithms) can help to find even hidden research topics and results in the context of the constant increase in the quantity of specialist information. This is what the specialist portal EconBiz stands for, which is an independent and transparent alternative to commercial providers.

In this sense, the optimisation of search results in library information systems is a constant challenge for software development, for example, at the ZBW. As a result of the DFG project LibRank in 2019, the EconBiz ranking methods were adapted to the search technology used, with a weighting on text/statistical methods, so that older literature or literature cited less often (“sleeping beauties”) is also regularly included in the top search results.

Workbench III: Improving the user experience in specialist portals
When we talk about how to organise moving away from the subscription model, we also need to discuss shadow libraries. The most commonly used one is SciHub. Many know about it and use it. SciHub is attractive for scientists who want to succeed in the current value system because they can find almost everything there. Numerous studies have shown that not only the access to scientific research results is a decisive criterion for scientists, but a high level of user-friendliness is also of key importance. Users want a simple and intuitive interface for literature research.

In order to make the scientific research process and access to information as convenient as possible for researchers and students of economics, the ZBW working group Software Development is continuously optimising the EconBiz portal. In 2019, for example, it introduced further search fields for granular searches (e.g. for dissertations) to the EconBiz portal and integrated searching via further data resources (“Other ZBW resources”). The “More like this” function – previously available across all titles – was limited to journal recommendations. Finally, in collaboration with the Web Science research group, it included key contextual information from external data sources in a journal in the context of beta development, including information on the impact factor and h-index, as well as on the Open Access policy.

Workbench IV: Researching incentives for Open Access
Guerilla Open Access or shadow libraries do not solve the problem of the lack of incentives to publish results directly and make them freely available through Open Access. A tried-and-tested concept for creating incentives is gamification, i.e. the use of game elements in a context not related to gaming. The Web Science team at the ZBW conducted an empirical study of gamification in the context of Open Access use among researchers and found that gamification does indeed motivate researchers to engage with the topic

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**DR ATHANASIOS MAZARAKIS**

has a degree in psychology, is a computer scientist, has a PhD in economics and has excellent knowledge of motivational structures, incentive design, incentives and algorithms. Since January 2014, he has been working as a research associate and postdoc in the fields of Human-Computer Interaction and Web Science at the ZBW and at the Department of Computer Science at the Christian-Albrecht University of Kiel. Dr Athanasios Mazarakis’ research focuses on gamification and software-generated and context-based feedback in particular. This means that users don’t get a “like” or a thumbs up or down, for example, as human feedback as usual. Rather, they get feedback from software. The software should also only provide feedback that is appropriate in the context. His preferred research method is field experiments and his key approach is the combination of methods that enables him to distinguish meaningful data from meaningless data in large quantities. He is interested in using smart data instead of just generating and evaluating big data.

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**Open Access status of journal articles in Germany, 2016-2020.**
The percentage weight is based on assigning 547,344 publications.
PAULA BRÄUER

has a Master’s degree in business information technology and has been working as a research assistant at the ZBW and the Department of Computer Science at the Christian-Albrecht University of Kiel since 2018. Her research focuses on the use of gamification in a very wide variety of applications. In addition to incentives for Open Access, she is also looking for ways to apply game-based approaches in new technologies, such as augmented reality and language assistants (e.g. Amazon Alexa).

of Open Access for a longer period of time.

In preparation for a much larger study, the ZBW conducted a field study with 28 people from three different institutions to empirically investigate how the game elements of a “badge” and a “progress bar” affect motivation when completing an online quiz on the topic of Open Access. Badges are visual artefacts awarded for tasks which have been completed, like the red belt in judo. Progress bars provide more basic feedback and show users how far they have progressed with their task and how much still needs to be completed. We are familiar with this from the gym: Four more, three more...

The result is that the game elements of the progress bar and the badge have a motivating effect in the context of an Open Access quiz. The scientists answered significantly more questions about Open Access on a voluntary basis in the conditions with the game elements than in the control group without gamification. Even though this is only a small exploratory preliminary study, it can be assumed that a quiz approach like this will increase awareness about Open Access amongst scientists. —

The websites www.wirtschaftsdienst.eu und www.intereconomics.eu offer a comprehensive archive of background articles from the last 20 years, which are also completely and freely accessible from January 2020.

2020: Wirtschaftsdienst and Intereconomics completely in Open Access

Starting on 1 January 2020, the ZBW makes its own economic policy journals available in Gold Open Access.

As an information infrastructure institution for economics, the ZBW actively supports and shapes the Open Access transformation and consistently transforms itself into a digital node for economics information, using innovative business models with publishers. In 2019, the ZBW negotiated an Open Access business model with the publisher Springer for its journals “Wirtschaftsdienst” and “Intereconomics”. This encompasses that all contents published under an Open Access licence (CC-BY) after 1 January 2020 can be read online by anyone who wishes to. Free access thus improves the knowledge transfer between research in economics and the corresponding debates in economic policy.

1916

Wirtschaftsdienst was first published in 1916 and has a long tradition as an economics journal.

560,760

In 2019, 560,760 articles were downloaded from the ZBW journal Intereconomics. In comparison: there were 472,425 downloads in 2018.
In all, 2,299 economists have written for Wirtschaftsdienst in the last 20 years.

Wirtschaftsdienst counted 1,081,439 downloads in 2019. In comparison: there were 866,229 downloads in 2018.

1,126 authors have contributed to Intereconomics during the last 20 years.

Intereconomics was first published in 1966 and celebrated its 50th anniversary in 2016.

Intereconomics is published bi-monthly.

Wirtschaftsdienst is published monthly.

In the future, more than 300 contributions per year will be freely accessible to the general public on the journal websites (www.wirtschaftsdienst.eu and intereconomics.eu) through the engagement of the ZBW for Open Access.
Third-party funding of the ZBW

German Research Foundation (DFG) 802,111 EUR
Federal Government 692,522 EUR
Foundations 493,434 EUR
European Union 126,463 EUR
Other third-party funders 120,056 EUR
State Governments 49,993 EUR
Leibniz Association (competition procedure) 49,864 EUR

TOTAL 2,334,444 EUR
This brochure is an abridged version of the ZBW Annual Report. The full report in German can be downloaded at www.zbw.eu/de/ueber-uns/