

Newsletter

Message from the Chair

Welcome to the fourth edition of our newsletter delving into the latest events and developments in teaching and research at the Chair of Internal Auditing!

The past semester was filled with exciting events, cooperations, and research activities as, e.g., members of the chair attended international conferences in Europe and the USA and our student chapter went on an excursion to tour the impressive Siemens Mobility factory. Within this dynamic atmosphere, there was also a surge in research activity, fueled by the newest technological developments. With their

ability to streamline tasks and increase automation, technologies like ChatGPT and similar AI innovations have the potential to significantly impact various professions. We, therefore, find ourselves in an era where humans can leverage AI to enhance their own abilities, potentially changing how we approach our work and stimulate innovation. At the Chair of Internal Auditing we are actively exploring this field, motivated by the need for better understanding of how AI technologies can be applied across different areas, including internal auditing.

On a personal note, I am grateful for our readers' continued interest in the chair's activities and deeply thankful for the individuals and companies that support us in our teaching and research endeavors. I would also like to thank everyone who contributed to this newest edition of our newsletter. Follow us on LinkedIn to keep up to date with the latest developments at our chair and please enjoy reading the fourth edition of our newsletter!

Sincerely,
Prof. Dr. Marc Eulerich,
CIA



Prof. Dr. Marc Eulerich

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Research Activities

A Selection of our Current Working Papers

Examining the Spillover Effects of Financial Reporting Fraud on Peers: An SEC Enforcement Perspective

Annika Bonrath, Marc Eulerich, and Benjamin Fligge

This paper is about the spillover impacts of financial reporting fraud on companies that are linked through industry affiliations and ownership connections. By using the SEC's Accounting and Auditing Enforcement Releases (AAERs) as indicators for such fraud, we delve

into whether public revelations about these malpractices either discourage or spread similar behavior among peer firms. Surprisingly, only those peers with ownership ties show an increase in their financial reporting quality after a fraud revelation. On the other

hand, companies within the same industry do not seem to change their behavior based on these announcements. Interestingly, when we look at the period before the SEC officially takes action, we confirm that these changes in reporting quality genuinely stem from public

enforcement measures. Our research contributes to the growing discussion around how companies influence each other, the effects of regulatory action, and common ownership.



Research Activities

A Selection of our Current Working Papers

Patience is Key: The Time it Takes to see Benefits from Continuous Auditing

Marc Eulerich, Benjamin Fligge, Vanessa I. Lopez Kasper, and David A. Wood

Despite research showing numerous benefits to continuous auditing and the first consideration of the concept more than 30 years ago, uptake by internal audit functions has been quite slow. This paper uses field data from a multinational company to study two possible reasons for the slow uptake of continuous auditing, which are the time it takes for continuous auditing to

result in measurable reductions in audit risks and that not every type of risk is equally likely to improve from continuous auditing. The data used in this paper covers 20 KRIs for 41 entities operating in different countries for a period stretching from 2015 to 2020. The studied company uses a self-designed CA system, which conducts automated tests on a quarterly

basis.

Analyzing the data shows that it takes three years before observing significant risk reductions from implementing continuous auditing and that the benefits of implementing continuous auditing vary by risk factor, ranging in improvement from 0 percent up to 51.6 percent for each additional year of continuous auditing use. These findings are im-

portant for practitioners in demonstrating the need for patience when implementing CA. However, CA can improve various KRIs over time, which adds value to the organization.

This paper can be downloaded here.

Can Artificial Intelligence Pass Accounting Certification Exams? ChatGPT: CPA, CMA, CIA, and EA?

Marc Eulerich, Aida Sanatizadeh, Hamid Vakilzadeh, and David A. Wood

This study analyzes the performance of ChatGPT, a prominent artificial intelligence language model, on answering questions from accounting certification exams. Specifically, the study analyzes four major accounting certification exams: the Certified Public Accountant (CPA), Certified Management Accountant (CMA), Certified Internal Auditor (CIA), and enrolled agent

(EA) exams. The findings reveal that ChatGPT 3.5 is unable to pass any exam, achieving an average score of 53.1%. However, the more recent ChatGPT 4 model significantly enhances performance, boosting the average score by 16.5%. Further improvements through few-shot training and enabling reasoning and interaction result in an overall average score of 85.1%.

These results suggest that AI, with modest additional effort, can pass these certification exams. The study acknowledges potential implications for the accounting profession, including concerns about job roles being affected by automation. It underscores the need for further research to guide the evolving role of accountants in a landscape where AI can perform certification-level tasks.

In summary, this research highlights the capacity of AI, represented by ChatGPT, to excel in accounting certification exams, prompting critical questions about the future role of accountants in an increasingly technology-driven industry.

All working papers can be found on [Prof. Dr. Marc Eulerich's author page at SSRN.com](https://ssrn.com/author/marc-eulerich).

A Selection of Recent Publications

The dark side of robotic process automation (RPA): Understanding risks and challenges with RPA.

Marc Eulerich, Nathan Waddoups, Martin Wagener, and David A. Wood

Accounting Horizons (forthcoming), 2023 (<https://doi.org/10.2308/HORIZONS-2022-019>)

This paper examines the risks and challenges associated with RPA. This is particularly important given most existing reports focus on the benefits of using RPA. Through interviewing multiple professionals five key challenges related to RPA usage are identified: (1) RPA is often used as a quick-fix Band-Aid instead of fixing core system issues, (2) RPA can cause serious control and security issues, (3) the true cost of RPA is often misunderstood and understated, (4) RPA governance is complicated and challenging, and (5) RPA usage can lead to a loss of process knowledge.



Research Activities

A Selection of Recent Publications

The ChatGPT Artificial Intelligence Chatbot: How Well Does It Answer Accounting Assessment Questions?

David A. Wood et al.

Issues in Accounting Education, 2023, Jg. 38 (4), 1-28 (<https://doi.org/10.2308/ISSUES-2023-013>)

Using data from 14 countries, ChatGPT and student performance for 28,085 questions from accounting assessments and textbook test banks is compared. As of January 2023, ChatGPT provides correct answers for 56.5 percent of questions and partially correct answers for an additional 9.4 percent of questions. When considering point values for questions, students significantly outperform. Still, ChatGPT performs better than the student average for 15.8 percent of assessments when partial credit is included. Evidence of how ChatGPT performs on different question types, accounting topics, class levels, open/closed assessments, and test bank questions is provided and implications for accounting education and research are discussed.



Bridging the Digital Skills Gap in Accounting: The Process Mining Audit Professional Curriculum and Badge

Scott A. Emett, Marc Eulerich, Katherine Lovejoy, Scott L. Summers, und David A. Wood

Accounting Horizons, (forthcoming), 2023 (<https://doi.org/10.2308/HORIZONS-2022-131>).

The authors designed, implemented, and evaluated a curriculum that trains accounting students and professionals in process mining, an important emerging technology that is not extensively taught in most degree programs. The authors partnered with a leading provider of process mining software to create the “Process Mining Audit Professional Badge.” The paper demonstrates an approach to developing materials on emerging technologies that is perceived as useful by learners. If adopted more broadly, the approach could facilitate curricular integration of skills demanded by the profession.



Global Relations

10th International Conference of the Journal of International Accounting Research (JIAR) in Norwich, England



Participants presenting their research papers at the Conference in Norwich

In June 2023, Annika Bonrath had the opportunity to present her research on diversity within internal audit teams at the Tenth International Conference of the Journal of International Accounting Research (JIAR) hosted by the University of East Anglia in Norwich, UK. The conference, set amidst Norwich's historic significance as a UNESCO World City of Literature, showcased a selection of insightful research papers, enlight-

ening keynote speakers, and lively plenary discussions. An evening dinner event at The Sainsbury Centre for Visual Arts provided an additional cultural touchstone. We convey our gratitude to the JIAR conference organizers for their successful event planning and express our appreciation for the invaluable feedback our presentation received to all the participants.

Global Relations

11th International Symposium on Accounting Information Systems in Lansing, Michigan

In June 2023, two of our PhD students, Vanessa Lopez Kasper and Benjamin Fligge, were invited to present their current working papers at the 11th International Symposium on Accounting Information Systems at Michigan State University in East Lansing, Michigan. Both of them presented current works on the topic of continuous audi-

ting, entitled “Patience is Key: The Time it Takes to see Benefits from Continuous Auditing” and “The Effects of Continuous Auditing and COVID-19 on Employees’ Likelihood of Complying with the Internal Control System: The Role of Conscientiousness.” As part of the conference, Vanessa and Benjamin had the opportunity to network and

State. The two-day conference was full of valuable feedback and pleasant conversations. Thanks to the openness of all participating researchers, the atmosphere and the exchange between the participants were excellent. Our PhD students especially enjoyed the manifold facets and diverse topics of the research presented at the conference and the

contributing buting to the field of accounting information systems.



Beaumont Tower in Michigan

2023 Leadership Academy and Global Student Conference in Orlando, Florida



Prof. Marc Eulerich and his PhD students at the conference

In April Marc Eulerich, Annika Bonrath, and Vanessa Lopez Kasper attended the 2023 Leadership Academy and Global Student Conference of the Institute of Internal Auditors (IIA) in Orlando, Florida. As the coordinator and advisors of the IAEP program at the Chair for Internal Auditing, they had the opportunity to exchange with other schools participating in the program on their teaching and courses. Marc additionally had the

opportunity to speak on incorporating internal audit research into teaching. Besides the educator’s track, the student’ track enabled students of IAEP schools from all over the United States to conduct an internal audit using a real-world example from the World Disney Resort, where the conference was taking place. From a professional perspective, the current update on the proposed global internal audit standards, as part of

the revision process of the International Profession Practice Framework (IPPF), was presented to the conference participants. Also, they had the chance to listen to the IIA President and CEO Anthony Pugliese speaking on the state of the profession. The conference was a great opportunity to get in touch with other IAEP schools and provided new ideas on how to further develop the program at the chair.

Conference on Internal Audit and Corporate Governance in London, England

In May 2023, our chair attended the 19th Conference on Internal Audit and Corporate Governance, hosted by Coventry University in London. Spanning three days, it started with a PhD day containing presentations by Benjamin Fligge and Martin Wagener, focusing on Continuous Auditing and the usage of software in the internal audit profession. The main conference days were

filled with interesting presentations and networking opportunities. Notably, Marc Eulerich presented a project on internal audit investment, contributing to discussions on internal audit staffing. The conference addressed a broad spectrum of topics, including cognitive biases, the future of internal auditing, gender diversity, and the integration of AI in internal auditing. It

also highlighted the connection between digital transformation and sustainability within corporate governance. In sum, the conference underscored the growing importance of sustainability and technology in the internal audit profession. It emphasized the role of corporate governance in integrating sustainability and how internal auditors can keep pace with technological de-

velopments, ensuring they provide ongoing value to their organizations. The event served as a platform for academic and practitioner collaboration, fostering discussions on emerging challenges and opportunities in internal auditing, corporate governance, sustainability, and technology.

Eight Questions to...

Thomas Berger, Director Group Audit at TUI GROUP



Thomas Berger

Thomas Berger is the Director of Group Audit at TUI GROUP, leading the global internal audit team. He started his career at TUI almost 10 years ago. Before that, he worked in auditing at PricewaterhouseCoopers where he first learned about internal auditing. This experience made him finally change his profession.

Thomas is not only responsible for the Group Internal Audit at TUI but also spokesperson of the Executive Board at the Deutsches Institut für Interne Revision (DIIR, German Institute of Internal Auditors). Additionally, he is leading the working group for young internal auditors at the DIIR dedicating his time to engage with and promote young professionals.

Also, we conducted a joint research project with him gathering insights on the role of internal auditors in the emerging field of ESG and sustainability. Thomas is always ready to help and jumps right in when professional input is needed in whatever project. He is always eager to learn about research and methodologies. The entire Chair looks forward to future projects together with Thomas Berger and the young professionals from the IIA's working group!

How did you first discover the profession of internal auditing yourself, and what makes working in this field so exciting in your view?

I stumbled upon internal auditing while working as an external auditor because we exchanged regularly. At that time and in my role my focus was all about accounting and numbers.

Later, when I moved to internal auditing, I learned about the beauty of this profession: It opened up a whole new world. Instead of just seeing the business reflected in figures, I started understanding the actual risks and challenges of companies' operations through our audits.

Even with many years of experience in internal auditing, are there still challenges or exciting innovations that you encounter in the profession?

Absolutely! That's what keeps this job thrilling. Currently, our focus includes assessing risks associated with large language models. Also, how can we bring more transparency on the status and the success of long-term business transformations, e.g., the sustainable transformation of our business model. The success of such transformation projects is crucial for the future of the company, therefore we believe Internal Audit must engage!

Traditional project audits alone cannot deliver this. I'm keen on exploring whether further university research might help to develop an audit product for this area.

As a student preparing for the auditing profession in a large corporation, what skills and qualities are essential?

Firstly, having a solid understanding of auditing tools and the profession is key. We would love to welcome such a new joiner in our department as this person would bring new perspectives to our processes.

Curiosity is another big one - being eager to understand risks and then being able to start from scratch with new audit topics.

Lastly, realizing that this job is all about people. Building trust and relationships means getting out into the business, and meeting colleagues is crucial. It therefore helps, when candidates bring prior work experience or internships with them.



Eight Questions to...

Thomas Berger, Director Group Audit at TUI GROUP

Do you perceive current technological developments as a threat or benefit to the auditing

Definitely a benefit! It's not a question of human versus AI; it's about the collaboration between the two.

We are all experimenting with these possibilities, but the key is to leverage them while being cautious about the associated risks.

What are your responsibilities as spokesperson of the Executive Board, and why is this work important to you?

The DIIR is a community, so it is not primarily about the spokesperson but about our more than 3,000 members, many of whom are engaged in working groups. Then it is about the institute itself, and the highly engaged colleagues working there. Without them, it would not be a prosperous and respected representation of our profession. In the Executive Board, every member has his/her role in working groups, topical areas, etc. I understand my role as a spokesperson coordinating all those activities best to shape the DIIR into what it is: The only professional body for Internal Auditors in Germany, bringing value to their members and being a voice that is heard in the Global Institute of Internal Auditors and within the business community of Germany.

What trend topics are particularly relevant to your internal auditing function, and how do you address them?

Presently, it is about aligning our activities with our company's strategy. We're heavily focused on providing assurance on digital initiatives, sustainability, and major transformations.

Additionally, we're exploring the use of large language models in audits and creating a plan for their application within the company.

What led you to commit to the auditing profession within the DIIR's Executive Board?

Joining DIIR was about expanding my network and learning from others in the field. You have to look at what is going on elsewhere to see whether your processes are still "state of the art".

Working on the Executive Board of the largest network of Internal Auditors in Germany allows me to contribute to the overall profession's development.

What does your daily work routine look like as the head of a corporate audit department?

The excellent aspect is, there's no such thing as a daily routine! A good part of my time goes into discussions with colleagues about audits and sharing results with stakeholders. I also dive into various internal management reports, looking for new topics where we can bring value to the business by getting engaged. Lastly, I am managing our resources and processes to make sure our function receives the attention it needs.

Thomas Berger's opinion about the Chair of Internal Auditing:

"It serves as Germany's center for research, diligently addressing the pressing challenges faced by the internal auditing profession. Through dedicated studies and collaborations with practitioners, their research initiatives significantly contribute to finding practical answers to today's questions. This pursuit of knowledge not only enriches academic understanding but also directly assists practitioners in navigating and overcoming hurdles, fostering advancements that fortify the internal auditing profession have developed without the Chair's essential research outcomes."

We would like to express our sincere thanks to Thomas Berger! We greatly appreciate his time and input in support of our efforts and the young professionals' careers.

News from the Campus

Lecture Trends in Internal Auditing and Corporate Governance



Brahim Elya and Bernd Hoffmann from Mercedes-Benz AG giving insights into the work in the field of Internal Auditing

As part of the lecture “Trends in Internal Auditing and Corporate Governance” the chair of internal auditing regularly invites internal audit functions as well as risk and control functions, to be part of the lecture and report on the current trends within their internal audit or risk and control activity. In doing so the practitioners provide the students with firsthand experience and the

opportunity to get in touch with the profession. Each lecture starts with a traditional frontal lecture format and has a focus on topics such as continuous auditing or artificial intelligence. After a short break, the lecture is taken over by the practitioners. This year’s practitioners are working for Schwarz Gruppe, Mercedes-Benz AG, Lufthansa AG, Siemens AG, Henkel AG & Co. KGaA, and Bayer displaying a broad variety of industries and thus, assurance and advisory issues. Whilst practitioners know the topics of the lectures, it is up to them to set their own focus in terms of content. For their lectures some companies rely on a frontal lecture format, others work

with case studies or demonstrate innovative technologies such as process mining in a live setting, giving students a very diverse picture of the profession. Same as the practitioners the chair is revising all of the lecture topics each year, which provides the opportunity to address upcoming topics, such as Artificial Intelligence (AI) in one of this year’s lectures. The lecture is part of the degree program with a focus on internal auditing and can be chosen by master’s students in business and economics. Further, the lecture is open to a guest audience and regularly attended by students from other disciplines or with a non-audit focus. The aim of the lecture, besides provid-

ing innovative teaching formats that are bridging the gap between academia and the profession, is to broaden the interest in and awareness of the topic of internal auditing. Students and practitioners who are interested in taking part in the lecture can get in touch with the chair by writing an e-mail with the subject “trends in internal auditing” to ircg@uni-due.de.



Dr. Ralf Krahnert - Head of Internal Audit, Pharma at Bayer discussing the current changes that the Internal Audit profession is facing

IAEP Student Chapter meets KPMG

In May 2023, we had the privilege of hosting a remarkable event in collaboration with KPMG at our campus. Marc Stauder, Ma-

ximiliane Marie Steinacker, Annika Wegner, Robert Duckscheer, Gian Luca Lobotka, and Thomas Wetingfeld provide insight into



Members of the Student Chapter meeting with employees of KPMG

the work of KPMG, including presentations on key areas such as Risk and Compliance, Corporate Governance, and Cybersecurity—areas closely aligned with the coursework covered in our IAEP Program. The event provided our students with a unique opportunity for direct interaction and networking with experts. We extend our sincere gratitude to KPMG for partnering with us to make this event a resounding success. Bridging the gap between

theory and practice is a vital component of our Student Chapter. We look forward to further collaborations and are happy to welcome more participants to our Internal Audit Education Partnership Program.





News from the Campus



Students bridging the gap between theory and practice in collaboration with Deloitte

As part of the ongoing cooperation with Deloitte our chair conducts its seminar on corporate governance and corporate monitoring during the summer semester split into two components. First, students dedicate a day to presenting and discussing their seminar papers. A second day involves the application of their theoretical knowledge in a practical setting at Deloitte's office in Düsseldorf. Thirteen of our students took advantage of this exciting opportunity and engaged in a learning experience that seamlessly blended networking with an immersive business simulation game. Students split up

into four teams to compete against each other. They had to collaborate to create an internal control system while balancing control effectiveness and cost efficiency. Later on, their internal control systems were put to the test to see how they would perform in the face of events such as data loss or breaches. The simulation game serves as a practical conduit for knowledge transfer regarding internal controls, providing our students with a unique opportunity to foster a comprehensive understanding of the structure, effectiveness, and practical implementation of internal control systems. The chair

thanks Thorben Ehrlich and Ricarda Eickhoff for their gracious hosting the event. The cooperation with Deloitte not only allowed our students to bridge the gap between theory and practice but also enriched

their understanding of the corporate landscape by offering valuable insights into the innerworkings of a Big Four company.



Seminar Participants at the Deloitte Campus in Düsseldorf

IAEP Student Chapter meets SIEMENS Mobility



Student Chapter Participants at Siemens Mobility in Krefeld

The IAEP student chapter had the honor of being invited to Siemens Mobility in Krefeld for their 125th jubilee. Trading our usual roles, instead of greeting guests at our Duisburg campus, we

found ourselves entering the captivating world of Siemens Mobility in Krefeld. Established in 1898, this historical manufacturing hub has created iconic train models such as the Mireo, Desiro HC, ICE

4, and the Velaro Novo. We were warmly greeted by the head of the plant, Gerhard Hoesl, who provided a brief introduction to the facility. Our experience was enriched with in-depth insights into IT assurance, understanding the pivotal role of information security at the Krefeld plant, and an engaging session with the internal audit team about the data flow in manufacturing. In the afternoon, we were given a tour of the facility. The detailed construction process of high-speed trains, notably the ICE 4, left a lasting impression that we will recall for many years.

This unique experience provided our IAEP student chapter with invaluable insights and firsthand knowledge, marking it as an unforgettable educational journey.



On the occasion of the plant's 125th anniversary, all participants received a brochure on the history of the location

Job Vacancies

Internship and Working Student Positions

Working Student for Corporate Audit (m/f/d) at TÜV Rheinland You can find the job ad [here](#).

Working Student Internal Audit (m/f/d) Rheinmetall AG You can find the job ad [here](#).

Working Student (m/f/d) Internal Audit at Viega You can find the job ad [here](#).

Full-time Positions

Internal Auditor (m/f/d) at CURRENTA You can find the job ad [here](#).

Referent External Auditing in Global Finance at KARL STORZ You can find the job ad [here](#).

Consultant Auditor (m/f/d) at Ernst & Young GmbH You can find the job ad [here](#).

More job offers can be found [on our website](#).

Chair of Internal Auditing

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Do you have any suggestions for us or would you like to contribute to the Newsletter in terms of an expert interview, an article, job vacancies, or similar? Feel free to send us an e-mail to newsletter.internalaudit@uni-due.de.

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