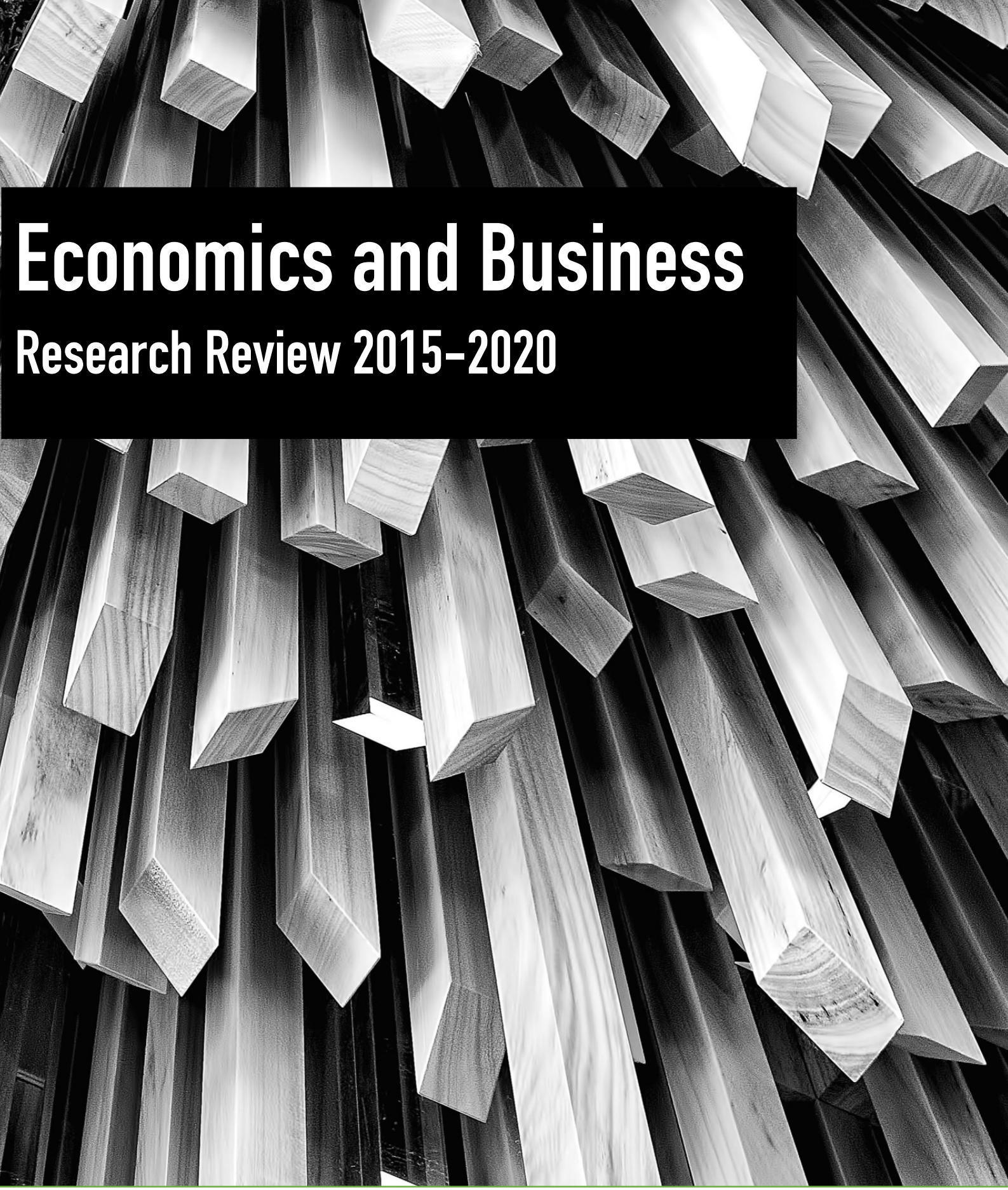

Economics and Business

Research Review 2015-2020

Research Review according to the
Strategy Evaluation Protocol 2021-2027


Maastricht
University


ERASMUS UNIVERSITEIT ROTTERDAM


UNIVERSITY OF AMSTERDAM


university of
groningen


Utrecht
University


VU
UNIVERSITY
AMSTERDAM

Contents

Meg van Bogaert & Floor Meijer

Nieuwegein/Amsterdam, the Netherlands, 2022

Preface

This review report is largely the result of a collaborative effort on the part of the seven participating universities, the review committee, and the secretaries. We gratefully thank everyone involved.

The universities were all highly cooperative at the various stages of the review process. Prior to the site visits, each university wrote a self-evaluation report summarizing its research organization, aims and strategy, and assessing its research in terms of quality, relevance to society, and viability. These reports provided the committee with a wealth of qualitative and quantitative information. During the (virtual) site visits the committee was invariably met with great openness by the management, academic representatives, PhD candidates and external stakeholders of the universities. The interviews were highly constructive and informative, adding up to a general picture of the schools participating in the review.

The committee consisted of ten members, working in four different countries and having different backgrounds and expertise. As chairs, we take the opportunity to thank all committee members for the time, effort, and expertise they contributed to the review. This includes preparing the site visits, conducting the interviews, giving early feedback, and co-authoring the report.

Meg van Bogaert and Floor Meijer, the secretaries, guided the committee through all stages of the review, including the site visits and compiling and copyediting the report. Their role can hardly be overstated. Without them it would not have been possible to conduct the review.

This report summarizes the committee's impressions, views, and recommendations regarding research in business and economics at the participating schools. It should be noted that our views are not set in stone. They are the committee's current reflection and it is hoped that they may help the schools toward realizing their goals.

Geert Dhaene and
Hylke Vandenbussche
Committee chairs

Leuven, February 2022

I. Introduction

In April 2021, the executive boards of Erasmus University Rotterdam (EUR), Maastricht University (MU), Open Universiteit (OU), University of Amsterdam (UvA), University of Groningen (UG), Utrecht University (UU) and Vrije Universiteit Amsterdam (VU) commissioned a review of the Economics and Business research conducted at their institutes in the 2015-2020 period. Tinbergen Institute (TI), the joint Research School in Economics of the Faculty of Economics and Business of UvA, the School of Business and Economics of VU and the Erasmus School of Economics, also participated in the review. The review was part of the regular six-year quality assurance cycle of the participating universities and intended to monitor and improve the quality of the research and fulfil the duty of accountability towards government and society.

Composition of the committee

The executive boards appointed a review committee (hereafter: 'committee') of ten external peers, including a mid-career researcher, a representative of the professional field and a PhD candidate. Prof. Paul De Grauwe was initially appointed chair of the committee but had to resign due to health reasons. He was replaced by Prof. Geert Dhaene. Prof. Hylke Vandenbussche joined the committee as co-chair and expert in the field of Economics. The committee consisted of:

- Prof. Geert Dhaene (chair), professor of Econometrics, KU Leuven, Belgium;
- Prof. Hylke Vandenbussche (chair), professor of Economics, KU Leuven, Belgium;
- Dr Patricio Dalton, associate professor of Economics, Tilburg University, the Netherlands;
- Dr Pieter Hasekamp, director of CPB Netherlands Bureau for Economic Policy Analysis, the Netherlands;
- Prof. Linda Hendry, professor of Operations Management, Lancaster University Management School, UK;
- Prof. Sophie Manigart, professor of Corporate Finance, Ghent University and Vlerick Business School, Belgium;
- Prof. Constantine (Costas) Katsikeas, Arnold Ziff Research Chair and Professor of Marketing and International Management, University of Leeds, UK;
- Anell Roos MSc, PhD candidate in Methods at the Radboud University Nijmegen, the Netherlands;
- Prof. Elizabeth Rose, research chair professor in Business Policy and Strategy at the Indian Institute of Management Udaipur, India.
- Prof. Marleen Willekens, professor of Accounting, KU Leuven, Belgium and part-time research professor at BI Norwegian Business School, Norway.

Dr Meg van Bogaert and Dr Floor Meijer were appointed as independent secretaries to the committee. Appendix 1 includes a short curriculum vitae of each of the committee members.

To ensure a transparent and unbiased assessment process, all members of the committee signed a statement of impartiality and confidentiality. Prior to the site visit, existing professional relationships between committee members and research units under assessment were disclosed and discussed. The committee concluded that there was no risk in terms of bias or undue influence.

Assessment criteria

The Strategy Evaluation Protocol 2021-2027 ('SEP') was the starting point for the committee's review. This protocol describes the aims and methods used to assess publicly funded research in the Netherlands. It was drawn up and adopted by the Association of Universities in the Netherlands (VSNU), the Dutch Research Council (NWO), and the Royal Netherlands Academy of Arts and Sciences (KNAW).

SEP identifies three main assessment criteria: (1) research quality, (2) relevance to society and (3) viability. Furthermore, SEP asks committees to take four specific aspects into account when assessing the three central criteria. These are: (1) Open Science, (2) PhD Policy and Training, (3) Academic Culture and (4) Human Resources Policy.

In addition to the guidelines and criteria suggested by the Strategy Evaluation Protocol, the committee considered the Terms of Reference issued by the boards of the participating institutes. In this document, the committee was specifically requested to offer its conclusions and recommendations on the participating research units as well as strategic recommendations for the entire discipline at the national level.

Documentation

Prior to the site visit, the committee received the self-evaluation reports of the participating schools, including the information and appendices required by the Strategy Evaluation Protocol. The following additional documents were provided:

- Standard Evaluation Protocol 2021-2027 (SEP);
- Terms of Reference for the research review;
- A Beginner's Guide to Dutch Academia (The Young Academy, 2018);
- Research Review Economics and Business 2008-2014 (report of the previous review committee);
- Netherlands Code of Conduct for Research Integrity (2018);
- Room for Everyone's Talent (position paper, 2019);
- Bibliometric research performance analysis in support of SEP evaluation Economics and Business Administration NL 2014-2018/9 (CWTS, 2021).

Working method

Leading up to the site visit, the committee members were asked to study the documentation and formulate preliminary assessments and questions for the interviews. In an online kick-off meeting two weeks prior to the site visit, the committee considered procedural matters and agreed upon a working method. Two committee members were appointed as the main reviewers for each school, taking the lead in the preparations for the site visit, in the interviews during the site visit and in the reporting on the SEP criteria of quality, relevance and viability. Additional committee members were asked to consider specific aspects, such as Open Science, Academic Culture and HR policies. The PhD member of the committee took the lead in the assessment of the PhD programmes of the schools, while the two chairs specifically focused on general aspects that traverse the level of the individual schools.

The digital site visit took place in the weeks of 13 and 20 September. Each of the seven participating schools was visited on a particular day, while Tinbergen Institute was represented in the meetings with UvA and VU. During the site visit days, the committee met with representatives of the institutes, including the management, senior and junior researchers and PhD candidates. In many cases, the committee also spoke with societal

stakeholders and representatives of the local Graduate School responsible for PhD training. Each site visit day was concluded with a meeting in which the committee discussed its findings and conclusions. After digitally visiting all seven institutes, the committee presented its overall and institute-specific conclusions and recommendations in a separate session on 27 September. The schedule for the site visit is included in appendix 2.

After the site visit, the chairs and the secretaries drafted a first version of the committee report, based on the assessments drawn up by the committee members. This draft report was circulated to the committee for all members to comment on. Subsequently, the draft report was presented to the participating institutes for factual corrections and comments. After considering this feedback in close consultation with the chair and other committee members, the secretaries finalised the report. The final report was presented to the executive boards of the participating institutes.

A note on the report

In this report, the review committee presents its findings, conclusions and recommendations, both at the level of the individual schools and at the overarching level. The committee set out to assess each school in light of its own aims and strategy, while taking the international context of the disciplines into consideration. No attempts were made to quantitatively compare or rank the participating research units. However, the committee did discuss the separate units in relation to each other in order to arrive at a well-rounded assessment that is supported by the committee as a whole. The committee hopes that this joint report will make it easier to identify and share best practices across the seven schools, thus benefiting the disciplines of Economics and Business as a whole.

In accordance with the Strategy Evaluation Protocol, the committee details its assessments on strategy and targets, research quality, societal relevance, viability and the associated specific aspects in separate chapters for all seven participating schools. The report concludes with a chapter that contains overarching recommendations for the Dutch disciplines of Economics and Business as a whole. Details on the composition of the committee, and the schedule of the digital site visits can be found in the appendices.

II. Erasmus University Rotterdam

Organisation

Rotterdam School of Management (RSM) is one of seven schools of Erasmus University Rotterdam (EUR). It is a university-based business school with a full-service portfolio of educational programmes. RSM has a far-reaching co-operation with the Erasmus School of Economics (ESE), one of the other EUR schools. Over two decades ago, ESE and RSM jointly founded the Erasmus Research Institute in Management (ERIM) to strengthen the research culture in economics and business. Since, ERIM has grown into a community of over 350 researchers (roughly 70% from RSM, and 30% from ESE). ERIM functions both as a research school, running the doctoral programme in management, and as a support system for researchers who are expected to sign the ERIM Membership Charter and fulfil the associated criteria. RSM's dean of research doubles as ERIM's scientific director, thus highlighting the close connections between school and institute. RSM staff participate in ERIM's five research programmes, which span the five major subdisciplines of management:

1. logistics, business information management, and innovation (LIS);
2. organisation theory, human resources management, and organisational behaviour (ORG);
3. marketing modelling, marketing strategy, consumer behaviour, and neuromarketing (MKT);
4. finance and accounting (F&A);
5. strategic management, strategic entrepreneurship, and global strategy (S&E).

Strategy and targets

RSM's mission was described to the committee as 'being a force for positive change', which translates into initiatives to work along the lines of the United Nation's Sustainable Development Goals (SDGs), to support research projects and research centres with a focus on sustainability and social responsibility, and to engage more with societal stakeholders. The school is strongly committed to a basic set of principles that is remarkably consistent over time. As was stressed during the site visit: RSM is in it for the long game and does not intend to alter its course too much from review period to review period. Many policies are long-standing, and some have even been in place since the establishment of ERIM more than twenty years ago. In effect, much of the research policy making has been outsourced to ERIM. Central to RSM/ERIM's strategy is the expectation that all research staff contribute to producing high-quality, impactful academic research and teaching with a high-level of scholarly impact and societal relevance. Policies are geared at sustaining RSM's reputation for high-quality academic research. For the current assessment period, RSM/ERIM's research priorities have been to solidify an open and responsible research culture, to engage in more selective publishing practices, to enhance research grant performance at both national and international levels, to become more societally impactful, and to provide top-quality PhD education resulting in better PhD placements.

Research infrastructure

The committee established that the research infrastructure of RSM/ERIM is of a particularly high quality. The relatively large size of ERIM enables economies of scale in offering excellent research facilities, support to research excellence, and opportunities for interaction and collaboration. ERIM provides RSM and ESE researchers with a full-service research support experience by continuously investing in open access publishing, data collection/management, lab facilities, software and database licenses, grant support and international collaborations, research visits, seminar series, and research dissemination. To this end, ERIM enlists the services of a legal counsel, funding officer, project desk, marketing and communication team, scientific programmers and a privacy officer. In the

interviews, RSM staff confirmed that they are very satisfied with support services offered, with grant application and data management being named as particular examples.

Research integrity
The committee learned that promoting research integrity was high on RSM's list of priorities over the past years. In line with the Netherlands Code of Conduct for Research Integrity (VSNU, 2018), RSM and ERIM set up structural facilities for promoting research integrity. Upholding the principles of professional academic behaviour as described in the code of conduct is also explicitly part of the current ERIM Membership Charter, signed by all members and fellows. Over the evaluation period, RSM has appointed four confidential counsellors, while EUR has set up a university-wide Scientific Integrity Committee for cases necessitating further review. Training is provided to staff at all levels to increase awareness of scientific integrity principles and actively equip and empower them to make the right choices when faced with dilemmas. All PhD candidates take a compulsory course in scientific integrity, which serves as the basis for other courses, in particular the various research methodology courses. New faculty members take part in a mandatory workshop on Research Integrity and Professionalism. Questionable research practices (such as HARKing) are addressed with the help of the EUR Dilemma Game. In the committee's opinion, this application, with which participants can gauge their knowledge on research ethics, is an especially admirable initiative.

Open Science
Open Science appears to be an area of increasing importance for RSM and ERIM. It is noted that RSM appears to be very proud of its open research culture and advancing implementation of open science principles. These are clearly very important to the leadership team and form a key part of the school's strategic vision. With successful results: staff indicated that they feel encouraged and intrinsically motivated to ensure that their output is accessible, although they do sometimes experience some tension between journal requirements and the ERIM strategy on Open Access publishing. Further, the committee notes that the self-evaluation report provides evidence of clear communication of research findings along with managerial implications to both external academic groups and a variety of other external stakeholders, and thus excellent evidence of dissemination of research findings. Further indication of RSM's devotion to open science is provided through the ERIM Open Science Award, FigShare and the use of ORCID.

There is an appropriate data management strategy in place. ERIM has developed Principles for Responsible Data Management (RDM) and employs a dedicated data steward who advises on FAIR principles and international standards during systematic meetings at department level. In addition, assistance on GDPR compliance is provided through a privacy officer appointed at RSM level. The research infrastructure was expanded to ensure that data, software codes, research material and corresponding metadata can be shared safely and stored securely.

Diversity
Like the other participating schools, RSM needs to catch up in terms of diversity. Women and minorities are traditionally not well represented in the workforce, especially in more senior roles. While the numbers in terms of female and international staff are going up year by year – in 2020, the overall share of female staff had risen to 34% while the proportion of international staff had grown to 54% – RSM has some way to go before its staff could be labelled as truly diverse. Senior roles are still predominantly fulfilled by male Dutch nationals; female representation at the level of full professor currently stands at just 18%. A relatively sizable proportion of international staff comes from other EU countries rather than the world at large. The interviews highlighted that the school is

committed to change. RSM acknowledges the need for a continued push to broaden the diversity focus from gender and internationalisation to other diversity aspects such as age, socio-economic background, LGBTQ and disabilities. The school is also aware that academic excellence criteria should be broadened to facilitate inclusivity. To help address these issues, a Dean of Faculty position was created in 2014, followed by the establishment of a Diversity Task Force (DTF) in 2015. The recommendations made by the DTF in terms of adapting HR policies and implementing more informal support structures (mentoring etc) were subsequently adopted into policy in 2016. This included the removal of structural barriers to promotion associated with parenthood, extension of the tenure track period for each pregnancy/ adoption and lowering of the teaching load for staff returning from maternity leave. A recent initiative (June 2021) is the appointment of a senior staff member in the role of Faculty Lead Diversity & Inclusion, with the primary task of monitoring that diversity and inclusion are indeed taken into consideration during the effectuation of all school policies. The committee applauds this accomplishment, which demonstrates that RSM does not content itself with implementing policies but wishes to see tangible results.

Research quality

Output strategy and results

The committee established that publication strategies are becoming increasingly selective and ambitious, with ERIM membership criteria gradually being raised over the years. RSM and ERIM both strongly encourage researchers to publish their work in peer-reviewed academic journals with the greatest possible impact in their field, as listed in the ERIM Journal List. The school's research incentive system strongly prioritises publications in a select set of top journals (44 journal titles), the so-called Primary Star (P-Star) publications. Moreover, RSM actively stimulates interdisciplinary research by giving full credits to very selective top publications in adjacent disciplines like psychology, sociology, or neuroscience.

The committee concludes that this strategy has been particularly fruitful. As one of the leading research-driven schools in Europe, RSM exhibits impressive performance across various criteria tapping research quality. Over the reporting period, RSM made an excellent contribution to the scientific body of knowledge across management disciplines, through its achievement of a growing number of academic journal publications with increasing share in top-tier journals. The school has also achieved a higher number of UTD-24 journal publications compared to the previous assessment period (164 for the current period, 106 for the previous evaluation period), with a solid field-weighted citation impact of 2.38. Increasingly, scholarly outputs are available under an open access license, with OA accounting for two thirds of the total volume of articles published by RSM in 2020. Further, faculty members demonstrate significant service at senior editorial positions as well as editorial review boards of prestigious academic journals (e.g., Journal of Consumer Research, Journal of Consumer Psychology, Academy of Management Journal, Academy of Management Review, Journal of Management, Journal of Business Venturing, Organization Theory, Organization Studies, and Transportation Science). This is a good reflection of the scholarly standing of these faculty within the field. In the domain of management, EUR is ranked 8th and 4th place on the 2019 and 2020 Academic Ranking of World Universities (ARWU) global management subject ranking and 4th and 3rd place on the 2019 and 2020 ARWU global business administration subject ranking.

Competitive funding

RSM stresses that engaging in funding initiatives, particularly aimed at competitive research grants at the national or EU level, is an integral part of what it expects faculty across all academic ranks to deploy as research activities. To encourage grant applications, RSM offers seed money and

support for the preparation of research proposals. In the period under review, RSM researchers were awarded 58 external research grants, of which 31 national NWO grants, 14 European grants (H2020, Erasmus+) and 13 grants from governmental and network organisations. The aggregate funding originating from research grants varied between 7% and 20% of the yearly RSM research budget. The origin of the grants also varied substantially, with the volume from national grants trending upward in recent years and that of EU grants trending downward. Contract research also showed considerable variation.

The committee notes that grant writing is extensively supported, and the practice of selecting individuals who might be successful in their application is to be recommended. Still, the committee believes that RSM could perform even better. The school's research excellence along other dimensions is not fully matched with the volume of grants acquired – even if the success rate of RSM's NWO Veni-Vidi-Vici grant applications exceeds the Dutch average. The committee feels, in particular, that RSM could be targeting large, consortium-type EU grants more assertively. Also, it is puzzling that grant writing is less prevalent amongst senior professors. The self-evaluation report laments that only a select proportion of senior faculty at RSM is consistently trying to acquire grant money, and that the school would have decidedly more financial possibilities if a greater proportion of them were to submit grant proposals. Stimulating this, through an active support structure and a combination of incentives (such as extra research time) and other ways of recognition, might help to diversify the income streams of EUR

HRM policies

The committee found that the school's HRM policies are aligned with its strategy of delivering world class impactful research. RSM is committed to a school-wide 'don't hire your own PhD candidates' rule, which was considered to have had positive results as it promotes the influx of fresh ideas, facilitates an ambassadorial structure, and helps establish fruitful reciprocal contacts with other universities. New staff are mainly hired at the assistant professor level, although there have recently been a limited number of hires at higher levels. Hiring at more senior levels might, in the committee's opinion, indeed be a good idea as it helps to increase diversity in senior roles. RSM has a highly structured tenure process, with a six-year tenure track period, rigorous but transparent evaluation criteria, and assessments and tenure decisions made by a school-wide committee. Around 40% of the initially hired tenure track faculty are eventually granted tenure. Post tenure, RSM has likewise articulated transparent criteria for promotion to associate and full professor. The committee concludes that junior staff in tenure track positions and more senior faculty face very similar incentives to produce high-quality, impactful research. A key element in RSM's research incentive system is ERIM membership, combined with the 'Research Voucher System'. RSM expects all research faculty to meet the (progressive) ERIM membership criteria, as laid out in the periodically updated ERIM Membership Charter. In particular, publishing in a very selective set of 44 management journals (labelled 'P-star' in the ERIM Journal List) is highly prioritised. Credits are also given for articles published in tier-two management journals ('P' in the ERIM Journal List), in top managerial journals ('M-star'), in non-management journals with a high ISI impact factor, and to impactful books published by an academic publisher. ERIM membership status is evaluated each year, based on a six-year evaluation window (recently extended from five years). Members lose their membership if they do not meet the criteria for two consecutive years but can regain it later. The committee established that junior professors are provided with generous research time through the Research Voucher System, where excellence in research leads, indirectly, to more dedicated research time (up to 60%, or 80% when acquired research grants are used to buy time). Interestingly, the vouchers earned by professors accrue to their

department as additional budget to hire lecturers, enabling the department to reduce the overall teaching load. This system encourages cooperation among professors in the same department to maximise the vouchers earned, by bringing below-average researchers up to par with their peers.
The committee applauds that the incentive structure at RSM is loyal to the school's goal of producing high-quality, high-impact research, and in particular to engage in more selective publishing practices. The incentive system is highly transparent and ensures merit-based allocation and protection of sufficient research time. Tenure and promotion criteria are also aligned, taking a holistic view focusing on research excellence, teaching and engagement with society at large. For research, a lower number of high-quality publications is more important than a higher quantity of publications. Annual appraisal talks with each faculty member, together with the possibility to make use of mentors from another department, ensure sufficient clarity on how to achieve the various goals. Further, there is some flexibility: while research quality is an exclusion criterion, the other criteria are nice-to-have rather than need-to-have. The interviews confirmed that the system enjoys wide support internally and is generally perceived as fair, even though it can be challenging to acquire (and keep) high-performing ERIM membership status.

Some issues need attention. First, tenure-track professors can engage in executive education. While this may increase their engagement with practitioners and create other opportunities, and while it is not mandatory to do so, the commission recommends limiting this practice and ensuring that tenure-track professors focus on research rather than on executive education. Second, while the system is generous to junior professors, it is less so to senior professors who have a higher teaching load. This might partially explain the remark that retention of mid-career professors is difficult and the observation that senior faculty are less active in grant-writing. Overall, it seems that the focus on providing a conducive environment for junior faculty comes somewhat at the expense of senior professors.

Academic culture
The interviews pointed out that RSM is fully aware that it should offer its staff an attractive, open and challenging academic culture in order to remain internationally competitive. RSM views its research groups as living bodies and places emphasis on a bottom-up, non-hierarchical academic setting. This – it was stressed – does require some adjustment from foreign staff members who are sometimes used to a more rigid academic structure. Interviewed staff were generally satisfied with the academic culture in terms of support, mentoring, and collaboration. The committee established that there is attention for the professional development and personal wellbeing of staff, for instance, in the form of a mentoring programme, where a junior staff member is paired with a senior staff member from a different department.

The interviews and documentation also confirmed that RSM is particularly supportive of academic collaboration, stimulating staff mobility, co-publishing with international co-author teams, co-organising academic conferences and workshops, participation in prestigious granting consortia and international co-supervision of PhD candidates. Travel and conference budgets were described as generous. At ERIM level, mini-grants are given out for organising conferences, arranging scholarly visits and research sabbaticals. Annually RSM hosts around two-hundred lectures by guest researchers, including international top faculty. The committee underscores RSM's attractiveness as a partner in research collaboration, although there may be some benefit in pushing faculty to connect even more with top researchers and top research groups worldwide to create long-term research collaborations.

Relevance to society

Strategy and policies
As part of its societal relevance strategy, RSM not only incentivises scholarly impactful research but also encourages research with broader societal relevance and implications. ERIM's membership charter places emphasis on producing research that is of top quality and with high impact. The outcome of a recent strategy process is that RSM aims to be a multi-stakeholder school that is conscious of its calling to serve the country as well as being an outstanding international business school. The school therefore deliberately opts to prioritise engagement with stakeholders, as it considers engagement activities as a necessary prior to impact. The committee notes that this focus on engagement and co-creation rather than on impact is a novel – and likely effective – approach to building enduring research-focused relationships with external partners. It is also timely, as RSM currently has too little partnerships with external organisations, compared to its academic strength.

The school explicitly recognises that there is room for improvement in this area. In its new strategy for 2025, and as part of its mission to be a force for positive change, the school gives priority to increasing societal engagement and attracting more contract research. Given its focus on academic excellence, the school seems well placed to do this, especially with the stronger support infrastructure that is now in place.
The appointment of a dean of engagement and partnerships following the recommendations of the midterm committee is a clear signal of the school's seriousness about and focal attention to this issue. Importantly, the school has also developed a research communication policy and made considerable investments in communicating research findings and their implications to business leaders. The RSM communication department helps researchers with their media presence, while the RSM legal counsel helps researchers who enter into agreements with commissioning parties and/or funding bodies.
RSM is aware that it can still improve in the area of tracking and documenting its impact on society and aims to incorporate its engagement ambitions into the school's remuneration and incentive schemes. This ambition has the full support of the committee.

Collaborations and results
Evidence is provided of impactful research and contributions as a result of working closely together with a variety of actors in the real business world (e.g., start-ups, scale-ups, family firms, banks, insurance companies) and public policy makers (e.g., municipalities, ministries, the Rotterdam Port Authority). Collaboration with external partners has been intensified via a number of RSM research centres that aim to provide innovative solutions to real-world problems, and as such create impact beyond academia. Examples are the Erasmus Centre for Data Analytics (ECDA), the Erasmus Centre for Leadership (ECL), the Partnership Resource Centre (PrC), the Erasmus Centre for Entrepreneurship (ECE), the Erasmus Centre for Corporate Communication, the Erasmus Centre for Future Energy Business (ECFEB) and the Erasmus Centre for Women and Organisations (ECWO). In setting up these centres, both the research interests of staff and perceived societal needs were taken into account. The centres were described as dynamic: in due course, current centres may have to make room for different centres.

In line with RSM's mission to be a force for positive change, a range of research initiatives, projects and centres (e.g., research group on Last-Mile Logistics, Centre for Eco-Transformation, Erasmus Platform for Sustainable Value Creation, Erasmus Centre for Future Energy Business) focus on sustainability and corporate social responsibility. These initiatives have resulted in some particularly topical research agendas and excellent projects that have the potential to produce internationally renowned impact. The research on Sustainable Development Goals and its mapping methodology is

innovative, timely, insightful and value-enhancing.

The RSM part-time PhD programme, which caters to academically driven business professionals, was described to the committee as a particular vehicle for collaboration on societally relevant research. It was said to help develop practical business and industry-specific knowledge, published in both academic and managerial outlets. With respect to communicating research results to practitioners, the committee believes that RSM can achieve more than it currently does. An opportunity for improvement is to encourage faculty to more consistently and frequently target leading practitioner journals (e.g., Harvard Business Review, Sloan Management Review). Such publications would increase RSM's visibility among important business and public policy audiences.

The committee established that several research projects, centres and initiatives have been co-sponsored by external partners. Despite the growth of third-stream income over the reporting period, the share of research contracts still seems modest considering the highly conducive research environment and the high level of support provided.

As emphasised in RSM's self-evaluation report, a challenging aspect is the question of how to build societal impact – or societal engagement – into the incentive and evaluation system. While societal engagement is one of the four criteria along which researchers at RSM are being evaluated for tenure and promotion, it was not clear to the committee how and to what extent this aspect plays a role in evaluations. It should be noted that it is harder to evaluate a researcher's societal engagement and impact than to evaluate his/her publication record. Nevertheless, as societal relevance and impact of research are becoming increasingly important, the committee recommends RSM to better articulate its role in the evaluation and incentive system.

Viability

In its research strategy for the future period RSM sets a clear goal to produce better research for a better world. In this context it introduces a number of specific aims that should foster its viability, such as enhanced granting and increasing impact and relevance.

Resources

The committee notes that the total RSM research budget increased by 29% over the review period. Nonetheless, the combined share of second- and third-stream funding decreased. RSM is aware that it could perform better in terms of grant acquisition and as such enhancing grant acquisition is an important part of RSM's future goals. To achieve this, RSM commits to further extending its support capabilities for grant writing, for example by better matching promising junior faculty with funding opportunities. It also plans to increase efforts for grant acquisition, especially individual excellence grants (ERC grants, NWO Veni-Vidi-Vici), grants rewarding curiosity-driven research, and high-profile consortium grants. As said before, an important challenge here will be to get substantially more senior faculty on board of grant writing activities. The committee further notes that, while curiosity-driven research remains important scientifically, research funding is increasingly driven by societal demand, so tilting toward that trend is likely to meet with increasing success in grant applications. While the committee appreciates that RSM attaches great importance to academic freedom in its research policy, it points out that RSM's focus on curiosity driven research and related grants is likely to face increasing competition. Other sources of funding, of which RSM provides a number of examples in its impact narratives, could add to the overall viability of the school. The committee believes that the relatively limited share of research contracts might be associated with the emphasis traditionally placed on the core income streams in RSM's business model. RSM holds a particularly strong market position in senior executive programmes of various types (e.g., senior

executive MBA, in-house training and executive education). Over the years, income generated from executive programmes has enabled RSM to pursue an ambitious research strategy based on research excellence and has created an attractive environment for research-active faculty. While acknowledging that RSM has reaped the benefits of this business model, the committee still recommends that the school diversify its revenue streams. Especially when combined with longer term strategic relationships/ partnerships, forms of contract research do not have to affect academic freedom and the quality of research in any negative way.

Scientific impact
The emphasis on selective publishing ought to result in a higher proportion of RSM output in the top 10 per cent decile of core top journals (versus non-core top journals) in 2027. Continued investments in selective publishing are also expected to result in a greater representation of RSM faculty amongst core-top editorial networks, especially in senior editor roles. RSM also seeks to reinforce its position as an internationally leading school for research by strengthening its responsible and open research culture and by making RSM a more attractive intellectual hub. This could also help in the retention of mid-career staff: the committee feels that it is important that RSM has enough to offer this important group of researchers. In addition, the committee repeats that the hiring of more senior staff could sometimes be considered. A key objective is connecting RSM faculty and PhD candidates with top researchers worldwide and creating longstanding research partnerships with reputed peer organisations. ERIM plays an important facilitative role in these processes.

Impact and relevance
Aiming to ensure the societal validation of its research, RSM will invest in the co-creation of impactful knowledge with academic and societal partners and is committed to develop and utilise responsible metrics for assessing its societal impact. In close collaboration with EUR, RSM is committed to developing and utilising new impact methodologies. With the support of the office of the dean of engagement and partnerships, RSM also engages in interactions with external and regional stakeholders, leading to relevant input of research data as well as funding from stakeholders. The committee believes that it is quite challenging to involve individual researchers in societal engagement activities when research is mainly curiosity driven and bottom-up. However, further development of interactions with societal stakeholders may help to expand RSM's societal impact and relevance.

PhD policy and training

In the interviews, PhDs were described as the 'heart and soul' of RSM. The committee sees this reflected in the attention given to PhD training and supervision. The school has developed both a full-time PhD programme, which caters to recent (research) master's graduates who aspire to an academic career, and a part-time PhD programme, aimed at business professionals looking to further develop their intellectual profile and academic skills. Both programmes adhere to the principles and guidelines outlined in the EUR Doctoral Regulations (2020). As per January 2022, ERIM acts as the graduate school for the full-time and part-time programme.
Over (much of) the review period, the full-time programme consisted of a two-year research master in Business and Management, followed by a PhD programme. With respect to admission to the full-time PhD programme, RSM prides itself in being highly selective, choosing to admit only a fraction (ca. 5%) of applicants. Annually, RSM funds around 16 PhD positions from direct funding. This number is supplemented by additional PhD positions created through external financing. As the School's reputation grows, its full-time PhD programme is increasingly international. RSM's part-time PhD programme started in September 2015 and is designed as a five-year programme focusing on the production of novel, practical knowledge, which is nonetheless fully evidence based. The programme is designed for fee-paying

professionals who are willing to combine their PhD research with their work commitments. Many part-time PhD candidates take their own industry as their research context. Currently, there are 50+ PhD candidates enrolled in the part-time programme. As the number of graduates is understandably still limited, it is too soon to fully assess the success of the programme.

The committee appreciates that training and supervision practices are much the same for full-time and part-time PhD candidates. The supervision of every PhD candidate is assigned to at least two supervisors: a promotor and a daily supervisor. Interviewed PhD candidates were satisfied with their supervision, emphasising that the exact nature depends on the supervisor and that the relationship is dynamic. The training programme consists of 40 EC for full-time candidates and 20 EC for part-time candidates. While rooted in mandatory courses, it is adaptable to PhD candidates' needs and requirements. The quality of the courses is generally high and suggestions for improvement are taken seriously. Course sharing agreements with other leading business schools are in place and PhD candidates are encouraged to take specialised courses at other universities. External courses are checked for quality and relevance. Individual study paths are detailed in the Teaching and Supervision Agreement (TSA), which is drawn up in the first three months of appointment. A new feature is the requirement for candidates to add an individual Data Management Plan (DMP). Progress is regularly evaluated according to the TSA and recorded in both a university-wide IT system (Hora Finita) and a tailor-made ERIM research information system (MIS).

RSM sees its full-time PhD programme as playing an important role in further developing a strong international research network. Graduates are viewed as ambassadors, and RSM thus generously invests in enabling them to build their social and academic capital. Budgets for (inter)national research stays and conference and seminar attendance are substantial. Furthermore, achieving top PhD placements was described as a firm priority of the full-time programme – with results to match: academic placement of PhDs is consistently high at 82%. RSM is continuously working on the professionalisation of placement services. Despite targeted events being on offer, interviews revealed that that the current job market preparation could be more formal and structured.

The PhD council at RSM appears strong and engaged with the rest of the school. Its members are active in advocating for the wellbeing of PhD candidates and are satisfied that communication channels are always open. Mental health support is offered, particularly through the 'Open Up'-programme, as well as five one-hour counselling slots with external counsellors. It appears that not all PhD candidates are aware of this option, so a better dissemination of information may be helpful. In response to the COVID-19 crisis, ERIM has taken several measures, including dedicated PhD townhalls and weekly PhD online 'drop-in' office hours. Contract extensions were offered to candidates experiencing substantial delays. An important development that was discussed extensively during the site visit is RMS's decision to discontinue its two-year research master, which was originally designed as the stepping stone for a PhD trajectory at RSM, and establish a five-year PhD programme instead. Over the past ten years, local enrolment in the research master proved disappointing and PhD candidates often came to the school via other channels. RSM believes that it will achieve better results with a fully funded five-year programme that is more attractive to research talent from within the Netherlands and beyond. The discontinuation of the research master as of 2021-2022 was said not to fundamentally change the content or structure of the PhD programme, as the same courses will continue to be taught. As the five-year PhD programme has yet to deliver its first graduates, it is up to the next committee to evaluate the results. The committee notes that the PhD population is small relative to the number of tenured

faculty, and that cohort size has been decreasing in the last few years as a result of the strategic decision to reduce the internal research budget for PhD candidate positions in order to incentivise grant acquisition and prepare the transition to the five-year programme. In the interviews, the management stressed its intention to deliver fewer but more rounded graduates with better publications and therefore a realistic chance of being hired at top institutions worldwide. From the interviews it was, however, clear that not all staff sees the value in supporting fewer candidates with a longer (and thus more costly) programme. There is a feeling that the number of PhD candidates needs to increase to reflect RSM's prominent international position. The small size of RSM's PhD programme and the relatively high proportion of candidates who fail to complete their doctoral studies are of concern to the committee.

Conclusion and recommendations

RSM is a highly ranked research-driven business school with an open research culture and a high level of societal engagement. The school stands out in terms of research quality and competes in a truly international league. RSM's achievements and contribution of outstanding quality are underpinned by its impressive long-term vision and the implementation of an effective research and publication policy, along with strong incentive and reward systems which clearly place emphasis on impactful top journal publications. RSM has managed to offer an effective balance between teaching load and research time, together with the use of teaching assistants/lecturing staff. This appears attractive particularly among junior faculty in their attempt to succeed in the tenure and promotion process. The relatively large size of ERIM also enables economies of scale in offering excellent research facilities, support to research excellence, and opportunities for interaction and collaboration. Like other schools, RSM is facing diversity issues but acknowledges them and pledged commitment to change. A concern is the small (and decreasing) size of RSM's full-time PhD programme. Having limited numbers of PhD candidates may not be in the PhD candidates' and the school's best interest. With respect to open science, the committee saw evidence of strong policies, with some indication that colleagues are compliant with these policies. The committee offers the following recommendations:

- RSM is advised to intensify grant applications and diversify its funding sources. Senior faculty who are currently not as involved in grant writing as they could be, should be incentivised to apply for grants and be rewarded for their efforts/ achievement. As research funding is increasingly driven by societal demand, the school is also advised to follow this trend and pair curiosity driven research with more applied, societally relevant research. Contract funding, especially when combined with longer term strategic partnerships with external stakeholders, could be explored further.
- RSM is encouraged to act upon its ambition to measure societal impact in terms of outcome and to engage more with external stakeholders in various important, value-creating ways.
- RSM will need to tackle issues with respect to staff retention, in particular regarding mid-career staff. This could be achieved by taking a more balanced approach in the allocation of research time and by making RSM a more attractive intellectual hub. To diversify staff profiles, RSM is advised to hire more faculty at senior levels. This would contribute to the development of a more plural, richer, and potentially more stimulating academic environment.
- RSM is advised to capitalise on its strong scholarly research achievements and promote long-term partnerships with world-leading research institutes to further elevate its brand reputation and take its standing up to a global level. Faculty

should be encouraged to team up with top researchers worldwide and engage in long-term research collaborations.
- It is important that RSM further invests in the new five-year PhD programme, by increasing the number of full-time PhD candidates and improving their completion rate. Efforts should also be made to make labour market preparation more formal and to improve communication on initiatives to promote wellbeing in the programme.

III. Maastricht University

Organisation

The Maastricht University School of Business and Economics (SBE) is organised according to a matrix structure of (academic and support) departments and institutes. The matrix structure was – among others – introduced to reduce perceived barriers in the governance structure. The following thirteen academic departments are disciplinary home bases for the academic staff: Marketing and Supply Chain Management (MSCM), Organisation, Strategy and Entrepreneurship (OSE), Accounting and Information Management (AIM), Macro, International and Labour Economics (MILE), Microeconomics and Public Economics (MPE), Quantitative Economics (QE), Data Analytics and Digitalisation (DAD), Finance (FIN), Educational Research and Development (ERD), Research Centre for Education and the Labour Market (ROA), Maastricht Economic and Social Research Institute on Innovation and Technology (MERIT) and two new departments, the Maastricht Sustainability Institute (MSI) and the Maastricht Graduate School of Governance (MGSoG). These two latter departments already existed and joined SBE in September 2019. MGSoG is not part of this review, as it participates in the United Nations University's internal review cycle with its own SEP review.

The Graduate Schools GSBE (Graduate School of Business and Economics) and GSX are SBE's central authorities on academic research and administer SBE's PhD programmes. GSBE is the largest of the two and evaluates research output of all departments and individual researchers (except for MSI and MGSoG). GSBE has its own budget to finance the PhD programme and to develop new research initiatives. Faculty members who demonstrate consistent research quality and significance of their research and research output over a period of four years, may become GSBE Fellows. In 2020, SBE had 131 GSBE Fellows.

GSX was created in September 2019 (after MSI and MGSoG joined the SBE) and serves as a home for challenge-driven research on topics of strong societal interest that is often transdisciplinary in nature. Both MSI and MGSoG have a chair in GSX. The Research Support Office (RSO) supports researchers from both schools, assisting them with regard to funding opportunities, grand writing, project management, and research policy development and implementation.

Strategy and targets

SBE's mission is to combine a strong commitment to excellent research and research-based education with a focus on impact and society. Its aim is to generate ideas that advance scientific knowledge and practice, and to educate and train undergraduates, graduates and professionals. By way of a bottom-up process, a strategic plan for 2017-2022 was developed. In 2019-2020, an updated vision for 2025 included explicit integration of the SDGs as well as new research initiatives.

The research mission focused on enhancing multidisciplinary research and addressing social needs, while preserving a strong disciplinary base. In terms of research quality, the main goals are a) to maintain research output and quality, and b) to enhance the quality of the research master and PhD programmes. In terms of societal relevance, the main goals are c) to stimulate multidisciplinary research, d) to enhance societal impact of research, and e) to increase internal and external visibility. In terms of viability, the main goal is f) to increase the volume of external research funding. According to the committee these are straightforward and clear goals, although it would have appreciated a more ambitious goal concerning research quality. By aiming at maintaining research quality, there is a risk that SBE will lag behind other schools that do explicitly focus on improving research quality.

Open Science

Since March 2020 a data steward supports SBE with the implementation of SBE's 2020

FAIR action plan and compliance to GDPR guidelines. The data steward assists with the development of new systems, supports in making data and digital resources FAIR, and is developing procedures and systems concerning GDPR support. A specific onboarding and offboarding procedure for PhD candidates has been implemented. Onboarding includes making sure that PhD candidates know how to manage their data, offboarding is ensuring that data of finished projects are properly stored at a safe UM environment. Open access publications are stimulated by way of financial compensation. GSBE compensates 50% of the fees for senior and 80% for junior researchers. This contributed to an increase in open access publications from 49% to 69% between 2015 and 2020.

The committee sees a clear attention to and focus on open science. Across SBE, several initiatives are being pushed. The library has a major role in using repositories for working papers and pre-prints. This system is already in place for several years, but at the time of the committee's visit, data sources still had to be included and an update is required when a publication is accepted. The school is also working on a specific repository of bachelor's and master's theses, making them openly accessible to new students.

The growing attention to open access publications and the progress achieved in this area are commendable, though the committee is of the opinion that further improvement is possible and needed. As journals increasingly give the opportunity for open access, and costs involved are (partly) compensated, this practice should be further monitored and maximised. In addition, researchers could be more systematically reminded when they neglect to put their publications in the Pure-database (PUblication and REsearch), the tool to manage, present and share publications.

Diversity
SBE exhibits broad international diversity in its faculty, with 59% having a non-Dutch background, representing 40 different nationalities. However, there is significant gender imbalance in the faculty across ranks, particularly among senior academic positions. The committee was pleased to learn that this issue is of strategic importance to SBE and constitutes a regular agenda item in monthly management meetings. Importantly, the dean actively engages in, and in fact leads, the gender diversity discussion within the school, and also serves on panels for the universities' Female Empowerment Committee and as an SBE ambassador for the National Network of Female Professors in the Netherlands. Several steps have been taken by SBE towards responding to the gender imbalance within its faculty, including salary data analysis and starting of a discussion to ensure transparency and close the salary gap as well as setting a target for each department to appoint a female associate professor.
Even though this is a common characteristic across academic institutions, it requires attention. This global challenge is faced by all Faculties of Business and Economics and the MU is aware of this challenge. Regardless of the external factors that complicate matters, SBE should actively and continuously work on internal mechanisms to enact change. These include the hiring processes and the inherent biases in the recruitment process. Improvement may be slow, but targets only have meaning if concrete and systemic measures exist to achieve them.

Workload
The problem-based learning (PBL) approach at MU leads to research intensive education and subsequently a (relatively) high teaching load. Although the workload was not an issue of concern that was explicitly raised by SBE researchers, the committee concludes from the interviews that individual teaching load is quite high, including those among some PhD candidates. The committee suggests SBE to reflect on the time allocation and interface between teaching and research.

Research quality

In the previous review in 2015, GSBE received the recommendation to improve research quality in terms of journals targeted. The self-evaluation report provides an accurate picture of SBE's research accomplishments over the review period and an honest reflection thereof in the light of SBE's strategic goals.
A clear sign of the high quality of the research at SBE is that between 2015 and 2020, SBE researchers obtained 138 research grants, including a number of highly prestigious ones: 2 Veni, 5 Vidi, and 2 ERC Starting Grants. Research grants constituted between 6% and 9% of total research funding; contract research was constantly very high, around 40%. Another mark of research quality recognition is the presence of SBE researchers in 86 editor roles and editorial boards of journals.

Between 2015 and 2020, the volume of refereed articles published by SBE researchers remained approximately constant. The last two years tend to show an increase, though, are also reflecting the enlargement of SBE in 2019 (joining of MSI and MGSoG) and subsequent growth in faculty. Zooming in on the quality of the journals in which SBE researchers publish, there are no clear upward or downward trends. In every segment of the journal quality distribution, as measured by the journal's Article Influence Score (AIS), the share of articles published by SBE remained approximately constant, subject to only mild fluctuations. Furthermore, the number of refereed books, book chapters, and PhD dissertations also remained fairly constant. The self-evaluation report concludes that 'research output and quality (measured by journal rankings) has remained stable which is in accordance with our first strategic goal'. The committee agrees with this conclusion: the research quantity and quality at SBE was good and stable over the review period indeed.

The committee noted that SBE is a very heterogeneous research school with many different departments. In the interviews, SBE representatives made it clear that the heterogeneity has historically grown and that each department has its own profile, culture and focus on education versus (contract) research. In some departments and research areas SBE is clearly very strong, while in other areas the research groups are rather small and internationally less visible. In the interviews with SBE representatives, it was mentioned that the heterogeneity leads to different ways of measuring the research quality across departments. For example, a department with a mathematical orientation considers *Conference Papers* an important publication, while this is not a sign of quality for other departments. Hence, it is very difficult to identify one single common measure of quality.

Taking this complexity of a heterogeneous school into consideration, the committee noted that the volume of refereed articles published by SBE researchers is relatively high: roughly 1.5 articles per year per head of faculty (or 4.5 per faculty research FTE). On the other hand, there is no tendency to publish more frequently in the better (higher impact) journals, even if this comes at the expense of publishing less in aggregate. In this regard, the self-evaluation report recalls that the previous review committee recommended to 'continue paying attention to improving research quality in terms of journals targeted'. The present committee somehow sees this as a missed opportunity to seeking 'maintaining research output and quality' in response to the recommendation by the previous committee. SBE is invited to critically re-examine this goal and the corresponding strategies to reach it. In particular, the committee believes that the current AIS-based point system in use at SBE to evaluate research output and quality is relatively generous for articles published in the mid- and low-quality range of journals, and not generous enough for articles in the best and very best journals. Thus, the committee echoes the earlier recommendation to target better journals (also when this means publishing less), and to adapt the incentives accordingly, including those for tenure and promotion. The committee strongly believes

this to be a viable goal, given many other signs that SBE has a significant number of excellent researchers. From the interview during the visit, it was made clear by the research staff that many have the intrinsic motivation to aim for high-impact journals. While the present incentive system appears to be more favorable to quantity than quality, the committee recognises the fact that research with high societal relevance and/or transdisciplinary research (two strategic pillars) is not yet always published by traditional top-tier journals. It is difficult to publish transdisciplinary research in the top journals. SBE gives transdisciplinary research the opportunity to develop and be published in a broader spectrum of journals. The expectation is that with time these areas will be able to publish their research in top-tier journals. This approach is appreciated by the committee, although it remains important that that GSBE ensures that the strong emphasis on societally relevant and transdisciplinary research is not at the expense of researchers who focus on curiosity-driven research. It is important to recognise both groups and endorse diversity of talent and interests in an inclusive environment.

HRM and talent management

SBE has an open culture and subscribes to the principles of 'Room for everyone's talent', which is a clear signal of commitment to inclusiveness. To foster societal impact, the criteria of business and societal impact have also been added to the set of existing criteria pertaining to teaching, research, good citizenship, fundraising. In assessing individual performance, attention is given to achieving excellence in some of these areas, but without failing to achieve minimum requirements across the various criteria. More specifically, the school has installed an SBE-wide tenure-track advisory committee to further developed tenure-track evaluation criteria, which the committee supports.

The committee appreciates that the criteria for tenure and promotion are diverse, include not only research quality, but also teaching and increasingly impact and reflect the 'room for talent' approach. At the same time, it is clear to the committee that the dialogue in SBE is still ongoing. Criteria are being developed and there are differences between departments in the way they value the different aspects. The committee once more emphasises the importance of a good balance between societal impact and curiosity-driven research, which should also be reflected in clear tenure and promotion criteria.

SBE places explicit emphasis on sustainable employability as a guiding principle in its HR vision. To the committee the effectiveness of SBE's strategy for the retention of good faculty was difficult to establish. The school has started implementing the Research, Education, External funding, Academic citizenship and leadership, and Dissemination and impact (REEAD) approach in recognising people's contributions and rewarding faculty. The committee is positive about the various university-wide policies to maximise the development opportunities for all academic staff, emphasising the successful progression of junior faculty and improving gender balance in the senior faculty.

Additionally, a number of personnel development projects were pursued to help address issues related to staff development, remuneration of senior management, equal pay of male and female faculty, leadership development and recruitment. The research staff informed the committee that it is fairly easy to meet the promotion and tenure criteria. This leads the committee to wonder if the criteria are sufficiently ambitious and selective.

Academic culture

A diversity and inclusivity (D&I) office was formed at UM level, periodically discussing with students and staff aspects that can be improved regarding diversity and inclusion. This is also explicitly part of SBE's vision and the input of staff and students is considered to be important.

SBE boasts a collegial and supportive academic culture, which was reiterated by SBE staff, and female researchers were well represented in all interviews during the review. It was clear to the committee that, in the wake of COVID-19, SBE staff came together to help maintain research and educational activities as much as possible and contributed to the strong supportive culture at SBE.

The dean informed the committee that the policy is to work with consent rather than consensus. This policy seems to work well, although the committee wonders if the heterogeneity witnessed across the school may present hurdles when it comes to establishing a common strategy, common criteria and an academic culture fostering inter-departmental collaboration.
In conclusion, although there are minor points of attention, the committee was impressed by the open and collaborative culture it met at SBE.

Integrity and research ethics
UM has a *Research Ethics and Integrity Platform* and furthermore installed the *Committee for Scientific Integrity* and the *Ethical Review Committee Inner-city Faculties*. UM stimulates the discussion on matters of integrity and research ethics, fosters exchange between faculties and organises events on relevant topics.

Regarding research ethics, SBE's policy focusses on providing training to the PhD candidates, expecting this to spill over to the broader academic staff. The committee points out that this policy might need to be re-evaluated, as senior staff are particularly in the position to transfer necessary skills and information to junior colleagues, while providing them with support on how to practically apply these skills.

Relevance to society

Societal relevance is at the heart of SBE's mission statement and the (future) organisation of the school is increasingly focused on impact, co-creation and societal relevance. Societal challenges often require a multidisciplinary research approach. This multidisciplinarity is explicitly stimulated by SBE. In 2017, five larger and two smaller multidisciplinary research themes were initiated, based on bottom-up engagement. Although this led to cross-disciplinary projects, other objectives (e.g., acquiring additional external funding) were not achieved. In 2020, a call for spearheads was launched to stimulate the co-creation of knowledge with external stakeholders. Spearheads are coherent cross-disciplinary research programmes including researchers from various departments and societal stakeholders. The spearheads are expected to contribute to SBE becoming more challenge-driven. Some of the former seven research themes have been incorporated in the three spearheads, which were launched in January 2021:

1) Maastricht Obervatory on Resilient, Responsible, Sustainable Enterprise and Economy (MORSE);
2) UM Behavioural Insights Centre (UM-BIC);
3) Fair and Smart Data (FSD). Another promising initiative received seed money to start up activities on digital transformations (DxU).

In addition to the multidisciplinary spearheads, several SBE departments have an explicit focus on societal relevance and impact. One of these departments, the Maastricht Sustainability Institute (MSI), is a high-level knowledge partner for externally funded projects that are focused on sustainable development. The approach of MSI is transdisciplinary, co-creative and participatory research, enabling research that is both academically sound and relevant to practice and society. MSI and another department, the Research Centre for Education and the Labour Market (ROA), are mainly funded by contract research and grants from government organisations, businesses and scientific funding bodies.

To increase internal and external visibility of SBE research, several actions have been

taken. For example, there is the dedicated support by the Marketing and Communication office (MarCom), the designated flagship projects such as Technequality, the FUNdii online platform which fosters science communication, and the stimulation of researchers to be leaders or partners in large prestigious European consortium grants. Although in the (recent) past its related strategy has been somewhat implicit, the committee concludes that SBE strongly focuses on societal impact. This conclusion is partly related to the recent establishment of a clear SBE strategy towards transdisciplinary research and co-creation with societal partners and stakeholders.

Quite some departments and researchers are enthusiastic about the strategy and focus on societal impact. They feel that societal impact and engagement can be combined with top research and scientific impact. The spearheads were recently introduced as the result of a bottom-up process, aiming at more interdisciplinarity and are welcomed by many. Although the spearheads were introduced only very recently, the committee is particularly positive about this development towards more transdisciplinary research. However, as evidenced from the interviews with both management and research staff, the committee also noticed that the new strategy may still be controversial in parts of the school. Some researchers may fear that the curiosity-driven research will become underappreciated. The committee considers it important that SBE also considers this group of researchers by giving sufficient and explicit space to curiosity-driven research.

From the interviews, it appears that SBE has not (yet) found a way to measure and reward societal relevance. Similar to nearly all universities in the Netherlands, this is work in progress and takes place in the context of the broader approach of MU as a whole towards greater recognition of both educational and impact activities, focusing on “room for everyone’s talent”. Developing a transparent measurement and reward system for social relevance may further help achieve the goal of creating societal impact.

Viability

SBE clearly has a solid focus on societal impact, which is visible in the strategy, in the amount of contract research (approximately 40% on average) and in the number of research grants. Some departments strongly depend on contract research, which might be a risk in the long-term. The committee suggests to have some buffers in place to deal with this kind of risks. The committee furthermore stimulates SBE to guard the balance in funding streams at school level.
In terms of long-term viability, the goal of GSBE is to increase the volume of external research funding (both grants and contract research). In recent years, the research support office added a senior funding officer and project manager to offer more pro-active and professionalised support to scientific staff who wish to apply for external research funding. These additions are expected to further strengthen SBE’s earning capacity. There is attention to career development, the committee commends the *Research Talent Committee* to support mid-career researchers. This is important to increase retaining talented research staff. As mentioned earlier in this report, it remains difficult to measure the actual societal impact of research. This is understandably prioritised by SBE, since societally relevant research is central to its strategy. According to the committee, it is important that SBE continues to discuss what requirements on societal impact are part of promotion decisions. From the interview with the dean, the committee is fully confident that this discussion is taking place and will lead to adequate requirements for promotion and tenure.

In the evaluation of quality, the committee provided feedback on the heterogeneity of SBE and its departments. The committee appreciates that SBE wants to respect the differences in cultures between departments and at the same time aims at developing synergies across departments. The development of strategic spearheads is an

important step towards this. The committee applauds this initiative and advices SBE to invest more in other cross-departmental initiatives, both at the academic level (joint seminars, workshops etc) and non-academic levels (informal gatherings etc). Up to a certain extent, the heterogeneity served SBE well, but further growth – both in size and quality - might require more collaborative efforts. The committee suggests to SBE to benchmarking of practices across groups, e.g. hiring policy, publication standards in order to aim alight the quality across groups.

PhD policy and training

The Graduate School of Business and Economics (GSBE) approves the appointment of PhD candidates, monitors their progress and stimulates research through specific, targeted actions. The PhD programme has a duration of four years. PhD candidates can participate in methodological, statistical, and academic courses from the research master and a course on writing a research proposal. In the first year, PhD candidates follow mandatory workshops on research ethics and research data management, as well as on seminar and poster presentation skills. The PhD candidates are expected to teach up to 20% of their time and are offered a teacher training.

PhD candidates and their supervisors jointly write a Training and Supervision Plan (TSP). The supervision team consists of at least two trained supervisors. Depending on the field, PhD candidates are expected to write three to four academic papers that are, in principle, of sufficient quality to be published in scientific journals.

The PhD Committee consists of one PhD candidate from each department and supports the PhD candidates with issues concerning research projects, supervision or other practical matters. The PhD Committee meets eight to ten times per year and reports to the GSBE management team. The PhD Committee furthermore organises social activities and colloquia for PhD candidates.

To monitor the progress of the PhD candidates, GSBE uses the PhD Track system, including built-in questionnaires on the PhD programme and guidance. Personal issues can be discussed between the PhD candidate and a PhD coach. In case a PhD candidate requires additional support, GSBE has confidential advisors.

The committee noticed that SBE has a somewhat informally structured PhD programme. For example, while a TSP exists to document formal training and trajectory aims, the exact course structure is developed based on previous training in the PhD candidate's research master or other type of master program. There is a lot of room to choose courses suited to the individual needs of each PhD candidate. There are, however, some mandatory courses to be taken. SBE clarified that efforts are being made to improve the structure of the PhD programme, particularly focusing on the redesign of the PhD course programme. The committee suggests that the informal structure might be of influence on the high rate of PhD candidates not completing their PhD within the timeframe allocated. It was encouraging to see that the PhD Committee was explicitly consulted about the redesign of the PhD training programme. The committee recommends that this kind of consultation should be organised on a regular basis. SBE is currently evaluating whether a better integration of the research master's degree and the PhD programme is a viable and sustainable option while keeping the quality of the programme unaffected. It occurred to the committee that the PhD process at SBE could be improved at several levels, including formalising and structuring the application process, which seems to be subject to shifts in the school. The committee recommendeds SBE to engage with the PhD Committee and the PhD candidate community at large, on how to achieve this.

The main concern that PhD candidates expressed was the limited opportunity to attend conferences, which they felt could influence their research and future chances on

the job market. The committee was reassured by the response of the SBE management that this should not be an issue and will be looked into.

PhD candidates are satisfied with the teaching load of 0,2 FTE and this is almost always adhered to. However, despite broad-based satisfaction of the PhD candidates, the committee suggests to implement a better monitoring process in which teaching days and hours are systematically and accurately registered to ensure that PhD candidates do not become overburdened.

Many PhD candidates suffered delays due to COVID-19, but were supported by SBE as extensions of 2-6 months were often granted. This is dependent on individual cases, with some having received longer extensions. For some PhD candidatess it is possible to obtain a teaching position of 60%-70% teaching time to finish their research if needed. PhD candidates seem to receive adequate job market preparation for academic and non-academic careers.

Overall, the PhD programme is adequate though somewhat informally structured. The lack of an effective monitoring process needs attention, especially in relation to the redesign of the course curriculum. In addition, the PhD programme would benefit from a more transparent intake process of PhD candidates.

Conclusion and recommendations

The committee concludes that SBE is a school in transition, and is fully aware of its strengths, weaknesses, opportunities and limits. The open attitude in the interviews was impressive and suggests an open culture within the school. Also, from the interviews, the committee gained a consistent impression of SBE.

The school had a stable performance over the period of evaluation in terms of quality of research. The committee is of the opinion that SBE might show more ambition concerning targeting scholarly academic journals at top-level. SBE strongly focuses on societal impact, co-creation of knowledge and transdisciplinary research. The recently formulated strategy will further these aspects. The committee emphasises the importance of clear incentives and criteria for tenure and promotion.

The school's heterogeneity seems to be a given and is considered a strength by SBE and most of its researchers. The heterogeneity has even increased over the years, which might lead to increasing tension and major differences of opinion on objectives and strategy. The committee suggests that SBE should pay particular attention to ensuring that this is or becomes and remains a strength rather than becoming a threat.

There is a strong basis with a clear philosophy on which SBE can further build in the upcoming period. The collegiality within the school is a major strength, reflected in the bottom-up approach. This approach seems to work well, despite the heterogeneity in departments and research. It is important to continuously include both researchers who prefer curiosity driven-research and those who more strongly focus on societal challenges.

The committee offers the following recommendations:

- The committee iterates the earlier recommendation to engage in more selective publishing, also if this results in publishing less. This includes the re-evaluation of SBE's incentives and criteria for tenure and promotion.
- SBE is advised to further develop an incentive system that measures societal impact and stimulates validation efforts.
- The development of the spearheads is commended. The committee encourages SBE to continue investing in cross-departmental initiatives and collaborations.
- The committee advises to put more structure on the PhD programme.

IV. Open Universiteit

Organisation

The Faculty of Management is one of the six faculties of Open Universiteit (OU). It consists of four departments which carry out multidisciplinary research in the field of Management and connected domains: Strategic Management, Organisation, Marketing and Supply Chain Management, and Accounting and Finance. For most of the review period, the Faculty was part of the larger Faculty of Management Science & Technology (MST). In 2019, OU went through a reorganisation process. The Faculty of MST was split into two separate organisational units, the Faculty of Management and the Faculty of Science, with more than half of MST's staff ending up in the Faculty of Science. After the reorganisation, in 2020, close to 18 FTE in the new Faculty of Management were fully devoted to research, which is equal to 35% of the total FTEs employed by the faculty. This number is indicative of the rather small size of the research unit compared to the other schools participating in the review.

The research efforts of the former Faculty of MST and the current Faculty of Management are part of the research programme Learning and Innovation in Resilient Systems (LIRS). This integrative programme was established in 2015 and became one of the three multidisciplinary research programmes of OU in 2020. Systemic resilience is the core theme, with both learning and innovation deemed necessary for systems to become and remain resilient. LIRS consists of three research lines:

1. The *Learning* research line aims to improve understanding of learning processes in individuals, groups, organisations and supply networks.
2. The *Innovation* research line intends to enhance knowledge of how innovations emerge, diffuse and impact the world, and the role of agency therein.
3. The *Resilience* research line aims to increase understanding of the capacity of systems to absorb disturbance and reorganise while undergoing change, and to retain essentially the same function.

Within the faculty, the vice dean of research coordinates research related activities. He is supported by the Research Committee that convenes monthly and consists of the director of the PhD programme, the three coordinators of the main research lines within LIRS, a representative of the post-docs and a PhD representative.

Strategy and targets

OU's overall mission is to be the part-time university of the Netherlands and Flanders, offering high-quality, flexible and activating online education, complemented and strengthened by research with societal relevance and impact. As part of the current strategic plan (2018-2022), OU aims to increase its research reputation by investing direct funding in PhD positions and by supporting multidisciplinary research that addresses major societal problems, with a focus on regional challenges faced by organisations and communities. OU (understandably) considers multidisciplinary research a viable niche for a small player in the academic landscape. The unit believes that it would irrevocably overstretch itself in trying to excel in each and every discipline. In line with the overall OU mission and research strategy, LIRS's mission is to increase understanding of the innovative and learning capacity of resilient systems, with the overall ambition to coherently unite a range of cutting-edge concepts and thus address societal challenges that involve a complex interplay between social, economic, technological and environmental factors.

The committee notes that LIRS began as the joint research programme of the Faculty of MST, and consequently focuses on multidisciplinary research, with a strong emphasis on societal stakeholders. This focus suits the position of the faculty, which is small and, as yet, has limited resources for

research. The committee appreciates the foresight of leadership here, and felt that this is a clever approach, which allows the faculty to build up critical mass around a focused set of themes as appropriate to the size of the unit.

The documentation and interviews made clear that the main challenge for research strategy development and implementation is that OU does not have a longstanding research tradition to fall back on. Until recently, the focus was firmly on teaching. Many staff members have part-time, teaching-heavy appointments and were not systematically involved in research. To strengthen the academic culture within the faculty, MST (and OU) invested strategic funds in research; PhD and postdoc positions were created, and existing staff have been facilitated to obtain a PhD. Moreover, research performance is now taken into consideration in recruitment and protected research time was introduced. Nonetheless, the common experience within the faculty is that bringing about a cultural shift takes a lot of time and effort, especially when increasing student numbers and heavy teaching loads are thrown into the mix. The committee appreciates very much that the faculty has started on the journey of focussing more on research, even if there is currently still some way to go. It encourages the Faculty of Management to keep up its efforts.

Research support
Part of OU's strategy to strengthen its research tradition was to invest in infrastructure. Recent initiatives include the implementation of a research management system (PURE), setting up grant writing support, facilitating open access publishing and appointing a data steward. Nonetheless, the committee notes that research support is still at a relatively low level. In addition, the SWOT analysis lists ICT and data storage as weaknesses.

Integrity
Research within LIRS is aligned with (inter)national regulations and agreements (e.g., Medical Research Involving Human Participants Act, GDPR, Netherlands Code of Conduct for Research Integrity, Code of Ethics for research in the social and behavioral sciences involving human participants, Ethical Principles of Psychologists and Code of Conduct of the APA). Research involving human participants is subject to ethical clearance from an internal research ethics committee (*Commissie Ethische Toetsing Onderzoek*, CETO). As part of the approval process, CETO requires applicants to formulate a data management plan in order to make sure data is properly stored and can be made available to peers. The committee commends these practices, which are in line with those found elsewhere. As the LIRS research programme continues to grow, at some point there will be a need to ensure that these practices are efficient as well as effective, by perhaps choosing an automated approach.

In order to increase awareness of research ethics, debates on research ethics are part of the LIRS seminars. Moreover, part of the PhD programme is dedicated to research ethics and open science. PhD candidates and their supervisors sign a statement that they will conduct their research in accordance with the Code of Conduct for Research Integrity. During the PhD defence, PhD candidates are required to make an official statement that their future research will be in line with research integrity rules.

Open Science
Several good initiatives were taken at OU to stimulate open research practices. These include the appointment of a data steward to support researchers regarding research data management (storage, archiving, sharing). Moreover, a document summarising the rules and regulations on research data storage was shared with LIRS researchers. Further, LIRS researchers have a personalised partition of a research data drive to store research data in a

robust and secure manner, and in line with privacy regulations. In 2018, OU created a fund to support open access publishing. LIRS researchers are entitled to use this fund to cover article processing fees of accepted papers. The committee appreciates these initiatives.

According to the CWTS report, 51% of all articles published by LIRS researchers in the 2014-2018 period are open access. There does not seem to be a systematic practice at OU to keep track of how many articles are published open access (in some form). The information provided in the self-assessment report is limited. The committee examined an (admittedly non-representative) sample of articles published by LIRS researchers between 2015 and 2020 and found that roughly two thirds are open access articles, showing an improvement compared to the CWTS figure. Nevertheless, the committee believes that much further progress regarding open access publications can be made with almost no effort and without additional funding. The committee also notes that OU intends to develop policies to stimulate researchers to make their research data publicly available. This is quite an important further step towards open science, and the committee supports OU's intentions in this direction.

Diversity
It is the ambition of the Faculty of Management to create equal opportunities for promotion and an inclusive work climate. Like the other schools in this review, OU records data on gender and nationality but cannot provide statistical information on other aspects of diversity. The faculty does reasonably well with respect to gender equality. It has taken a number of actions to boost gender equality that seem to have paid off, including the establishment of a support network for women in academia. The committee notes that OU as a whole outperforms the other Dutch universities in the 2020 Women Professor Monitor. The share of female full professors at the former Faculty of MST (24%) and current Faculty of Management (30%) is above the national average of 14%, implying that female role models are less scarce than elsewhere. Nonetheless, the Faculty of Management's performance at the level of associate professor is less strong: currently none of the faculty's six associated professors is female. At the assistant professor and PhD candidate level, men slightly outnumber women by 53% and 56% respectively. This suggests that further actions are needed to attract and retain talented female staff. The current staff includes nine different (mostly European) nationalities, some members have a second affiliation at a university in their country of origin. OU's teaching programmes are Dutch-taught, which means that staff are traditionally from Dutch-speaking contexts (Netherlands, Flanders). With plans to develop English-taught curricula, a further internationalisation of staff is anticipated. Staff members from different nationalities were said to be supported in their integration at OU.

Research quality

Output
The self-evaluation report indicates that LIRS researchers are encouraged to publish in peer reviewed and especially in ISI listed journals as part of the faculty's output strategy. Over the reporting period, this resulted in an increase of the number of peer reviewed publications, from 77 in 2015 to 103 in 2020. The committee established that for each FTE invested in research, LIRS researchers published a (high) total of 3-4 peer-review papers per year, both in journals in the field of Economics and Business Administration and in multidisciplinary outlets.

The committee is of the opinion that this increased quantity of publications is an appropriate first stage of evolution into becoming a research active university. The committee noted evidence of some good journal hits, and although this development was driven by a small number of researchers, it is still considered an impressive improvement. Moreover, the committee saw

indications of an excellent understanding of the relational view, as needed to make a theoretical contribution to top journals and significantly strengthen research quality. Nevertheless, the committee noted that a wider variety of theoretical lenses/ contributions will be needed in the longer term. The committee also notes that the school is trying to achieve synergies between research and teaching, for example, using the concept of teaching circles for masters' students in the fields of the research interests of the faculty, which helps staff to develop their research. One drawback of this policy is that the quality of the research that can be done at MSc thesis level is unlikely to eventually be published in top journals, even with substantial involvement of senior faculty.

The committee concludes that there is evidence of a growing academic reputation and leadership, as also shown by increasing citation scores (cf. CWTS analysis). The committee had some difficulty in assessing the overall quality of publications, especially with respect to management researchers' contribution to the collective output of LIRS. Some clarification on this was provided through the provision of a longer publication list following the visit, which was helpful. OU has made a conscious decision not to implement a journal list, which it sees as a rigid tool that does not match the intended multidisciplinarity of the research programme. As the change process develops and the number of research-active staff grows, the committee felt that the faculty may want to revise its stance and implement some sort of system that prioritises high-quality outlets. Moving forward, the faculty may benefit by incentivising quality over quantity with respect to publications.

The scientific achievements of LIRS are also demonstrated by the presence of staff in editorial boards of scientific journals, mainly with a clear multidisciplinary focus, which is consistent with the research strategy. Various researchers received research awards and were active as keynote speakers at important national and international conferences.

Funding

In the evaluation period, especially in the early years (2015-2017), direct funding was the most important source of income for LIRS. As a young and small research programme, LIRS did not expect to do well in the (inter)national competition for grants, where it would have to compete with well-established research units. Second stream funding (which included two NWO grants) amounted to an average of around 4% of LIRS's annual research budget in the 2015-2020 period. The 2018 mid-term committee urged researchers to focus on acquiring important international grants to further support their research efforts, resulting in the creation of a coaching system in which more senior staff supports juniors in their grant applications. In the opinion of the current committee, the recommendation on grant acquisition still stands. The committee emphasises the importance of competitive funding in building a research reputation. The committee was informed of strategic internal investments, both at Faculty and OU level, aimed at maximising interdepartmental research collaborations and stimulating multidisciplinarity. In 2016, the Faculty of MST launched an internal call for research proposals, resulting in four PhD and three post-doc projects initiated in 2017-2018. More OU-level calls for proposals followed in 2018 and 2019. In 2020, OU created an internal fund for supporting multidisciplinary research and organised two internal open calls in 2020 and 2021, which generated seven new internal PhD candidates for LIRS.

HRM policies

Part of the faculty's strategic plan is to strengthen support of young researchers by developing mentoring systems for grant applications and career advancement. As yet, OU does not have an incentive system for publishing in top journals or other scientific accomplishments. The management mentioned that there are 'implicit' mechanisms to promote research quality. In the committee's opinion, explicit incentivising would make sense at this particular point in OU's journey.

A formal tenure track system is lacking at OU, though the system that is in use mimics a tenure track to a certain extent. Staff are employed on fixed-term contracts for four years and evaluated after three years, with positive evaluation leading to a permanent position. Criteria are tailored and geared to promoting different kinds of career paths, staff do not need to excel in everything in order to get permanent employment. The committee notes that there is widespread satisfaction amongst staff about this system. Not having to fulfil rigid tenure criteria is thought to take the pressure off and add to the attractiveness of the working environment at OU. The committee counters that not having explicit criteria may mean that criteria are implicit and therefore less transparent. In practice this can lead to unwelcome inequalities. The committee recommends introducing a formal system of requirements for tenure and promotion, in order to coordinate expectations on the school's ambition to publish in high quality outlets. Such criteria should above all provide transparency. The faculty can decide for itself how high it wants to set the bar. The committee noted that there seems to be an emphasis on growth by hiring graduates of OU's own PhD programme. While this certainly contributes to the sense of community – which is clearly very strong – it could potentially be limiting in terms of bringing in new skills, approaches, and ideas, and hence in strengthening research quality over time. External hiring could give OU the push that it needs at this particular point in time.

Academic culture

As mentioned, the school is going through a major transition from focusing only on teaching to prioritising both teaching and research. There are indeed many challenges in creating the associated research culture. To foster a research culture, the school tailors the research time allocation according to individual preferences and talents, protecting 30% research time for staff members who are research oriented (and up to 80% for PhD candidates and postdocs). In the same vein, the faculty organises international conferences, symposia and special issues on the topics of its research focus (resilience, sustainability, and global challenges). While these are laudable efforts, there are still additional steps to be taken. The committee, for instance, suggests revising the capping of the research time of mid-career and senior staff at 30%, as the latter is likely to interfere with the ambitious overall objectives of the faculty in terms of research excellence. Also, the committee wonders what effect the common OU practice of part-time appointments has on cultivating a genuine research culture.

Considering that seminar series are often central to an academic environment, the committee sees a clear opportunity to expand on current initiatives. It recognises the monthly LIRS seminars and hosting of several conferences/events with international guest speakers (such as the bi-annual LIRS conferences held in 2017 and 2019) as an important step in developing both the research quality of LIRS and developing its research reputation at the same time. Yet, the frequency of seminars was lowered during the COVID-pandemic. It surprised the committee that the OU, with its history of providing distance education, did not fully jump on the online seminar trend, which would have allowed for no-cost seminars from top scholars around the world.

In addition, the committee is of the opinion that increasing the individual research budgets of staff will help to strengthen the visibility of the research done by the faculty and hence its academic culture. It seems that, apart from the part-time faculty with double affiliations, the contacts and cooperation outside of OU seem rather limited. While this may be partly a function of the emphasis on contextually embedded, practice-based research, expanding on collaborative academic engagement would help LIRS researchers to continue to develop their research capabilities. Overall, the committee was struck by interviewees stressing how happy they are at the faculty. The supportive, almost familial and interpersonal culture of the OU, made possible

by the physical nearness of staff who are all housed in one building, received particular praise. The committee was glad to hear this, and feels that this contentment can be utilised within the larger discussion of the OU's future feasibility, its reputation, and ability to produce sound research. Furthermore, the career progression of staff must be evaluated against these factors, after which the academic culture as discussed thus far may play a less important role.

Relevance to society

Collaboration with stakeholders
As a consequence of its mission to increase understanding of learning and innovation in resilient systems, OU actively engages with societal partners in a multidisciplinary way. Ensuring that research efforts have an impact on society was described as a priority for LIRS researchers. Through its participation in the Brightlands Smart Services Campus (BSSC, 2016) and the establishment of the Center for Actionable Research of the Open Universiteit (CAROU, 2019), OU maintains a strong presence in the local innovation ecosystem in Limburg. BSSC was described to the committee as a 'triple helix' campus founded to facilitate collaboration between research and knowledge institutes (i.e. OU, Maastricht University, Zuyd University of Applied Sciences, TNO) and various societal partners. It specifically aims at generating breakthroughs in the context of digital transformation to support organisational sustainability and the provision of smart services aimed at improving the quality of life. Examples of joint projects presented to the committee include BISS, Smart Shopping City, EmoDash and Deep Solaris. Linking with BSSC was clearly a smart move that paid off. CAROU, meanwhile, is OU's own research valorisation centre in the context of the BSSC, established in January 2019. Currently, CAROU is LIRS's main research valorisation vehicle. Its activities include the creation of a COVID-19 dashboard that maps the infection rates and spread in the Netherlands, as well as involvement in the BSSC Techruption project, in which campus partners exchange and co-create ideas on how organisations can cope with and make use of disruptive technologies.

Contract research
In recent years, OU has clearly been very successful at attracting contract research, working for and with partners such as the Province of Limburg, the Dutch Police Academy, the Dutch Banking Association, the European Union, the United Nations, the Association of Universities in the Netherlands and VGZ Insurance Company. The committee notes that third stream funding accounts for a significant percentage (up to 46%) of LIRS's annual revenue. In the coming period, OU aims to further exploit funding opportunities present in the context of the BSSC.
While staff indicated that academic goals are a necessary condition for contract research, within the committee some concerns were raised on whether the line between consultancy and academic research could always clearly be drawn. Also, the recent split between the Faculty of Management and the Science Faculty invited the question to what extent the collaborations with external stakeholders were driven by staff that is now in the Science faculty.

Impact through MA and PhD programmes
Students and external PhD candidates were repeatedly described as a particular asset during the interviews. LIRS benefits from the fact that its parttime teaching model for master's students and PhD candidates provides a direct connection, through its students, to societal stakeholders. Most of the theses realised in the master's programmes have a strong applied component, while most of the PhD candidates are external PhD candidates who (often) combine their PhD research with a paid position in another organisation. The topics that they work on are often directly related to real issues that organisations (or society in general) are confronted with.

Capitalising on the networks and positions of external PhD candidates in order to create a direct academic knowledge transfer to society, is part of OU's strategic plan for the

coming period. The faculty hopes to attract PhD candidates from organisations that operate in the BSSC and the region, thereby expanding its collaboration with societal partners. Furthermore, it intends to increase the involvement of PhDs in the research valorisation efforts of LIRS, especially in the context of CAROU. The 'Ghana cohort', consisting of seven PhD candidates from Ghana, is considered a particularly important initiative for research valorisation. Much of the research done by this cohort addresses issues that are highly relevant for the general social and economic context in Ghana. The committee believes that engaging external PhD candidates in research activities on societal impact makes sense as it offers valuable potential to work with real life data to address important societal challenges. This comes with some risk though, and it is important to monitor that such endeavours also generate scientific impact.

Outreach
Outreach activities aimed at the general public have grown over the reporting period. Results of scientific research were transferred to the professional field through professional publications and to society at large through communications via various media channels. Given the focus on societal relevance, multidisciplinary research, and deep links with real-life research problems, the committee believes that there might be value in developing a communication and measurement strategy regarding the achieved societal impact.

Viability

The documentation and interviews highlighted that the strategic research-related plans of the faculty continue to evolve. Considering that less than ten years ago OU was a teaching-oriented environment where staff was not systematically involved in research, significant progress has been made. The committee also appreciates that the faculty undertook a formal mid-term review and acted on the results of that evaluation, developing strategies to strengthen the research mindset of staff and making additional research funding available. As OU itself is aware, substantial challenges remain in completing the transition to a research orientation. The faculty will need to carefully strategise and manage the available resources to nurture its nascent academic culture.

Output
In terms of research focus, valid choices have been made. Some of the current research topics, such as supply chain learning – on which there is evidence of a top publication – are up and coming areas of increasing importance. Thus, this focus will aid viability. However, setting goals in terms of the overall quality of output should be higher on the faculty's list of priorities. The emphasis on producing research with its genesis in masters-level dissertations does not provide a clear pathway to publication in top-tier journals and should therefore be reconsidered. In the committee's opinion, it would also be useful to work on creating some meaningful, targeted international linkages to enhance research collaboration. This offers the potential for both research output and signalling. Similarly, it will be important to increase the available funding for research-active staff to attend conferences, to enable engagement with the international academic community.

Resources
The committee notes that the recent (2019) split of the faculty into two smaller faculties has not had enough time to reach a steady state, especially given COVID-related disruptions. However, a clear implication is that the resources available for research are now much smaller than previously. Currently, the total number of FTEs in the Faculty of Management is just over 46, a significant decrease compared to just before the split in 2019, when MST's staff numbered more than 100 FTE.

The committee discussed the longer-term consequences of this reorganisation and explored its potential effects on viability. The

committee was pleased to note that OU is investing strategic funds in research, creating internal PhD and postdoc positions and aiming for protected research time. Also, the recent shift to multi-year budgets should allow for more stability and the opportunity to plan. The apparent openness of communication, both within the faculty and between the faculty and the wider university, is a valuable resource.

The ongoing transition to a stronger research orientation is a bold initiative, which the committee highly commends. It did question whether the composition of the research-active staff affects longer-term viability. The heavy reliance on part-time appointments that also involve teaching is not necessarily a problem, but it would be worth thinking about the impact of having key researchers at the institute on a part-time basis, in terms of the development of a research environment. After initially focusing on attracting part-time senior researchers with work experience at other Dutch universities, there now seems to be an emphasis on internal recruitment at junior level, hiring alumni of the OU PhD programme to expand research capacity. The committee has concerns about the impact of this approach on the longer-term shift toward a research orientation, given the limitation that 'hiring your own' imposes on the injection of new ideas and approaches. The committee is not convinced that the lack of a (formal) tenure-track holds merit as a long-term strategy, given that these systems provide transparent signals in terms of career progression. The committee also recommends aiming to increase the percentage of research time for staff, which is currently on the low side at 30%.

The committee concludes that the viability of the transition to a research orientation is likely to depend on setting clear quality targets. That might have implications for the collegial feel of the school, of course, which is a trade-off that will need to be considered. At present, given the size of the faculty, flexibility is feasible. Growth will bring the need for more formalised structures.

PhD policy and training

The committee notes that PhD level education has a relatively short history at OU. The PhD programme formally started in 2010, with the establishment of the Graduate School (GS). Initially, OU did not offer structured PhD training; PhD candidates were given a personal budget to follow specific courses or trainings relevant to their research. In 2016, the Faculty of MST started its own training programme, consisting of specialised courses in management research skills. Courses were originally offered in collaboration with the Nijmegen School of Management of Radboud University, until Nijmegen discontinued the partnership in 2018. As of 2019, content-specific courses are supplemented by generic courses on research ethics, research methods and academic writing offered at the OU Graduate School level.

PhD candidates at OU are mostly external candidates who combine their PhD trajectory with employment elsewhere. This is generally seen as positive, as it solidifies OU's collaboration with business and brings real world problems into their research. External PhD candidates that the committee spoke with praised the flexibility of the OU programme, which they found more accommodative of external PhD candidates than programmes elsewhere. Internal PhD candidates are recognised as particularly valuable in terms of strengthening the academic culture. Recently, additional first stream funding was therefore made available for PhD positions.

The PhD selection process and procedures for matching PhD candidates with supervisors seem adequate. The Graduate School and Faculty of Management offer specific courses that help external PhD candidates develop their research proposal and design their PhD research. This pre-PhD programme seems a good way to prepare external PhD candidates for a PhD trajectory. The committee established that the proposal is part of the application process but is finalised once a candidate has been accepted. The research

proposal includes the training plan of the PhD candidate, approved by the supervisor and the external LIRS evaluator.

The committee notes that the PhD programme is primarily tailored to the doctoral education of external PhD candidates. Internal candidates are expected to already possess the required skills and knowledge base and do not have to do coursework. Following up on a recommendation to minimise differences between internal and external candidates made by the midterm committee, as of 2018 internal PhD candidates are encouraged to follow the courses on offer. Should PhD candidates have additional needs, they are encouraged to pursue specialist training elsewhere. The committee notes that PhD candidates are not obliged to teach. Combined with the non-prescribed nature of the coursework, this means that the PhD experience at OU can be significantly different from that of internal PhD candidates elsewhere, which is something for OU to consider. In the committee's opinion, it seems advisable to introduce mandatory courses, or at least establish partnerships with other universities where OU candidates can follow courses in a structured manner. One specific issue that came up was that PhD candidates would like access to larger budgets to travel to conferences and seminars. The committee supports the PhD candidates in this pursuit. OU PhD candidates have at least two supervisors, with a full professor acting as promotor. The multidisciplinary supervisory team regularly evaluates the progress of the PhD research and internal PhD candidates are subject to an official performance appraisal after the first year of employment. According to PhD candidates with whom the committee spoke, there is just as much attention for their personal well-being as for their academic performance. A downside of the small size of the programme is that the sense of being part of a PhD community is perhaps less strong than elsewhere.

Job market preparation starts in year 4 and the supervisor is the primary point of contact when it comes to network building. The committee found that there is no clear data on placement after graduation; evidently, many PhD candidates already have jobs to begin with. Nonetheless, OU is recommended to systematically collect placement data to monitor the effect of its PhD programme. Considering that graduates of the MA and PhD programmes are seen as essential in developing and maintaining contacts with companies and societal partners, the faculty is also advised to develop a structured system of alumni relations. Current contacts with alumni were described as good, but they are mostly maintained by individual staff members. Improvement is also needed with respect to completion times and drop-out rates, which seem particularly long/high for cohorts that consisted mostly of external candidates.

Conclusion and recommendations

The committee established that LIRS has a well-focused mission that is highly topical and a good fit for the modest size of the programme and the path that it is currently on, transitioning from a teaching-led environment to a more research-oriented culture. Multidisciplinary research is the programme's niche of choice, which is understandable given that the faculty is too small to successfully compete in separate disciplines. The strategic choices that have been made indicate that there is foresight of leadership In the interviews, much emphasis was placed on the flexibility and the informal, family-like atmosphere that comes with being a small group. Staff are clearly very loyal to the faculty, and supportive of one another. Nevertheless, if the faculty is after further growth in terms of size and quality, this will require making some hard choices in the near future, building on the current strategy to enable further development. If the faculty wants to pursue research at an internationally competitive level and enhance its reputation and visibility, it may want to establish more formal, transparent structures. External recruitment to bring in outside perspectives, applying for research grants, expanding the seminar culture, introducing explicit research incentives and establishing a tenure track

programme are also part of that picture. As it stands, there seems to be a strong reliance on publishing based on master's theses and the committee feels strongly that this is not the best approach to achieving high-quality research in the longer term.
The committee applauds the high level of involvement with companies and societal partners, there is clear evidence of co-creation and citizen science. At the same time, the committee could not clearly distinguish some of the resulting research from consultancy. It sees a real risk of projects being a collection of cases rather than a solid base for academic relevance, with output reaching insufficient disciplinary depth.

The PhD programme is small and loosely structured. The coursework in the programme is very informally organised and the committee got a sense that not all candidates receive training. According to PhD candidates, the programme is also flexible and adaptable to personal needs, with much attention for personal wellbeing. If the programme continues to grow, a more structured approach might be needed in order to give graduates a good starting position in the competitive international job market. Monitoring placements is a necessary first step.

The committee offers the following recommendations:

- LIRS is encouraged to strengthen its international visibility and academic culture by establishing an ambitious seminar series, with leading international scholars, and by increasing the individual research budgets of staff, thus facilitating the development of an international network. Securing of competitive grants is an essential step towards establishing an international research reputation and LIRS should therefore continue to push for grant application/acquisition. Aiming for further progress regarding open access publishing is also recommended.
- The faculty is advised to consider explicit incentivising of high quality publishing and setting transparent criteria for tenure and promotion. The focus on part-time employment should be reconsidered, as well as the current cap on research time. Furthermore, the committee believes that more extensive external hiring would be beneficial. Specific attention should be paid to attracting and retaining talented female staff at the assistant and associate professor levels.
- Further attention needs to be paid to ensure that the line between consultancy and academic research is always clearly drawn, not only but especially where external PhD candidates are engaged in societally relevant research. It is important to monitor that such endeavours generate scientific as well as societal impact. Furthermore, there may be value in developing a communication and measurement strategy regarding the achieved societal impact.
- The committee feels that there is merit in a more structured PhD programme, which could help to reduce the rather low progression/completion rate of PhD candidates. OU should consider introducing mandatory courses for internal PhD candidates, which are standard practice elsewhere in the country. Alternatively, the institute could establish partnerships with other universities so that PhD candidates are able to follow a programme of coursework in a structured manner. In addition, OU is recommended to systematically collect placement data to monitor the outcomes of its PhD programme.

V. University of Amsterdam

Organisation

The University of Amsterdam Economics & Business (UvA EB) consists of two schools, each with its own Research Institute: The Amsterdam Business School Research Institute (ABS) and the Amsterdam School of Economics Research Institute (ASE). Both research institutes have their own management teams and are headed by a research director, providing strategic leadership and administrative management for the implementation of the research strategy. The schools work together regarding matters of faculty-wide research policy. The committee has separately interviewed research staff and PhD candidates of both schools, and had joint management, graduate school and stakeholders interviews with both schools. In its assessment, the committee combines both schools, but will include specifics of each school where this has added value.

Vision and mission

The University of Amsterdam (UvA) values, promotes and rewards excellent research. It aims to enable researchers to perform ground-breaking research. The research profile is focusing on a number of research priority areas and excellent researchers have been appointed to the research domains in which the UvA aims to reinforce its international profile.

UvA EB aims to conduct and publish internationally highly recognised and relevant research across a broad range of business and economics disciplines. Its ambition is to be a leading European business and economics faculty, known for high quality research and education. It furthermore wants to be outward looking, making a significant contribution to business and society. UvA EB launched the 'outside-in' research initiative that stimulates research in the areas of sustainability and environmental economics; responsible digital transformations; resilient societies and stability; and nudging for a better world. The aim of these initiatives is to contribute towards resolving challenging societal problems requiring interdisciplinary and large-scale collaborative work with other UvA faculties, whilst continuing to work in areas of strength that have been built up. UvA EB wants to offer an inspiring international learning community, where staff and students can develop their capacities optimally. A broad research spectrum is required to be able to provide research-driven education. In the evaluation period, the research strategy of UvA EB was in line with that of UvA, focusing on three UvA research priority areas (and one Faculty research priority area). In order to achieve its vision and mission, UvA EB strongly focuses on internationalisation, on partnerships with industry, government and other academic disciplines, preparation of students for a career in business and economics, both knowledge and skills, and on offering outstanding research facilities and opportunities to students and staff.

ABS

ABS aims to be a leading European business school, producing high quality research and education, and making a significant contribution to business and society. The key strategic drivers are: internationalisation and strong (industrial) partnerships, the start-up community, NGO's, government and other academic disciplines. ABS furthermore aims to foster 'independent minds' by offering research based teaching, and to have impact on international business and society at large by conducting high quality academic research in core areas of business and management and on innovative and societally relevant themes.

One of the ABS aims in the period of evaluation is to improve research quality and output in international refereed journals. The strategy to achieve this aim was the recruitment (and retention) of high-quality academics with developed research capacities. Most faculty members join ABS at the assistant professor level in a tenure track

programme. By offering good employment conditions and an excellent academic working environment, ABS aims at hiring and retaining high quality research staff.

The binding element for ABS as a school was not explicitly visible to the committee. Even though cooperation is not a must and ABS has many very good individual researchers, the committee emphasises that stronger ties between the research groups may benefit the quality of research at ABS. The committee stimulates ABS to work on this in the upcoming period of evaluation.

ASE
The main strategic aim of ASE is to produce research in (quantitative) economics with a high impact on the international academic research agenda and a strong societal relevance. In the recent period, ASE worked on increasing the school's international impact and stimulating its researchers in writing grant applications. The school works towards becoming a Top-10 school in Europe in each of the broad areas micro, macro and quantitative economics. This implies a quality over quantity approach. ASE, like ABS is focusing on hiring new, talented junior research staff in its 6-year tenure track. ASE is furthermore developing in line with the university's focus on research priority areas, including Behavioural Economics and Risk and Macro Finance.

According to the committee, the ASE aims and goals are clear and sound. It is, however, less clear to the committee what strategies will be used to achieve them in the upcoming years.

Diversity
Both schools try to use the recruitment strategy to diversify the research staff, regarding gender balance, age and non-European or non-North American background. Over the period of the review this led to a more diverse group of junior researchers. However, a major imbalance is still observed at the senior level. The imbalance is particularly large at ASE, with 82% of the faculty being male. Although the management is aware of this imbalance and its undesirability, it proves difficult to change. The committee acknowledges that the UvA is not unique in this respect: economics is internationally still a relatively male-dominated discipline. Even so, reducing the imbalance (particularly at ASE) seems rather slow and the committee believes that more effort is definitely needed. In this respect the committee notes that in the two most recent years the junior hires were predominantly male (though this is much less the case over the entire review period). Although the external causes indicated by UvA EB are valid, the committee stimulates the schools to more explicitly look for solutions internally. The diversity action plan is a step into the right direction, it will be an important task for UvA EB to ensure compliance with the measures outlined in this diversity action plan.

Research quality

Research quality is clearly a top priority, and although the aim to be among the top schools in Europe is not yet achieved, both schools have been clearly improving the quality of the research and output. For UvA EB as a whole, research impact (e.g., citations) is above world average, but the self-evaluation report states that UvA EB scores around the median of other Dutch departments. More specifically, the committee observes heterogeneity across fields and departments. In some fields, both schools may be close to reaching its goal, for example the recent success within the Microeconomics group in winning NWO and ERC grants. Other groups are not yet at this point and need to continue to work on achieving the aim of the schools. It might help these groups to aim at hiring faculty at more senior levels.

The committee is aware that a number of groups are not publishing in mainstream economic journals, but nevertheless have could have impact and be influential in their own fields. The committee agrees with the approach of UvA EB that if the development of these groups is managed well, this should eventually lead to them becoming renowned

groups and established fields (e.g., experimental economics group).
The tenure criteria are transparent and emphasise quality over quantity: three articles published in at least medium-impact journals are required for tenure, or one in a top-5 journal and one in a medium-impact journal; also, as proof of independence, one of these articles has to be solo authored. The committee is positive about this approach and stimulates UvA EB to - in line with DORA principles - include alternative quality criteria beyond journal quality, e.g. citations and collaborative activities. Tenure-track faculty receive a generous 60% research time in the first three years, and 50% in the last three years. ASE-RI tenured faculty members receive research time according to the criteria for research fellowships at the Tinbergen Institute, based on the Article Influence Score (AIS) of the best five articles in the last five years; their research time is capped at 50% maximum. Research time for ABS-RI tenured faculty is awarded in a slightly different manner.

The committee appreciates that for hiring, tenure and promotion decisions, the focus is clearly on quality over quantity. Research time is flexible and can be temporary increased by reducing the teaching load. This reduction of teaching load can be used for writing grants or for taking up managerial tasks. There is also sufficient support provided to researchers while writing a grant proposal. These measures have led to a clear growth in quality and resulted in research output in top-ranked journals, an increase in the number of PhDs and an increase in successful acquisition of individual grants.

As mentioned before, both schools produce solid research. The fact that student population has grown very rapidly, is advanced by ASE as a limitation of research quality, as its faculty base (although growing) could not entirely keep up with this growth. The committee acknowledges that the growth in student numbers poses a challenge. In ABS, this problem is being tackled by hiring (part-time) lecturers and thus relieving teaching pressure from research staff.

Funding
The total amount of funding remained stable for ASE over the period of evaluation. ASE was successful in attracting funding from research projects with external organisations, which led to a slight increase in total funding. Funding for ABS significantly increased, mainly due to the nearly doubling of direct funding (Executive Education). The committee advises to ABS to increase focus on expanding research grants and projects with external organisations as a source of funding. Both schools implemented an incentive scheme for researchers to submit research grant applications. This scheme aims at increasing the number and success rate of researchers who apply for (large individual) grants. The incentive includes a reduction of teaching load (ASE), or a fixed amount of money to compensate for the additional work to reduce teaching load or acquire datasets (ABS). Professional support by Innovation Exchange Amsterdam (IXA) is provided to researchers for writing research grant proposals. The new incentive system for grant acquisition and increased support has proven to work, resulting in more ERC and other types of external funding, which is a good accomplishment The committee stimulates the schools to continue providing this type of support.

Despite the success in acquiring external funding (ASE) and an increase of direct funding (ABS), the research budget remains limited. This forces the schools to be selective on research topics. According to the committee, research output currently seems predominantly the result of the sum of work by individually strong researchers. A more collective approach within and between the schools could further increase the quality of the output. Both ABS and ASE could investigate how collaboration could lead to exceeding the sum of the parts.
Already, collaboration efforts are under way between ABS and ASE, for example in the area of Business Analytics and Data Science.

According to the committee, the stimulation of team work across research groups and schools could be further intensified as part of the incentive scheme. The committee considers this an opportunity for both schools.

HRM
By offering support (e.g. coaching) and a workload reduction, the schools aim at improving working conditions for (junior) staff. Both schools appointed a mentor to help PhD candidates and tenure track assistant professors to settle in at UvA EB. The mentor is also available to provide counselling on personal issues or working relationships. When needed, mentors will refer the staff member to the confidential adviser/ ombudsperson. These measures are valuable for the research staff, the committee stimulates UvA EB to keep monitoring the wellbeing of the staff.

In the period of this review, UvA EB has been successful in hiring talented and promising junior faculty. Most vacancies are filled at the tenure track level, but occasionally also senior research staff is hired. Recruitment of assistant professors primarily takes place through the international academic job market. This is applauded by the committee, it stimulates the outside perspectives into the schools. UvA EB adopted a six-year tenure track with a midterm review after three years. Criteria that are considered to get tenure include teaching performance, service, acquisition of external funding and research performance.

To improve research quality and reach the ambition of becoming a top-10 European school, UvA invests significantly in the selection and recruitment process. UvA EB implements what is called “the Ajax model”. Since it cannot compete salary-wise for the international top (senior) candidates, it scouts young talents with the potential to grow. While this approach was relatively successful in the past, UvA EB is also experiencing challenges in retaining high quality talent, particularly international faculty. This is of special concern due to the aging of senior staff: in the upcoming decade, a lot of senior staff will retire and the schools need to develop the next generation of academic leaders. Barriers for retention issues mentioned by the schools are not only lower salaries than those offered by international competitors, but also spouses who do not find jobs and the high housing prices in Amsterdam. According to the committee, UvA EB should develop policies and activities to retain its talents. The committee stimulates UvA EB to look for ways and opportunities to hire at more senior levels, by providing other incentives than high salaries, e.g. to be flexible with regard to working from home and explicitly give support to spouses to find a job.

Research Integrity
The committee concludes that the schools have an adequate system in place dealing with research integrity. UvA EB adheres to and participates in various university-wide policies. This includes the UvA general code of conduct. The UvA Ethics Committee (AIEC) includes a representative per faculty and advises on ethical issues at the central level. Research integrity was not discussed extensively during the visit, but based on the documentation the committee is confident that UvA, UvA EB and the schools have a solid system in place.

Data management and Open science
Similar to integrity, UvA has adopted guidelines for data management to be implemented at each faculty. In 2020, this led to a Research Data Management (RDM) plan at UvA EB level. Currently, the schools are working on implementing the RDM plan on a practical, day-to-day level. The schools stimulate their researchers to register all research projects and data in Figshare, the university’s online repository. Data stewards check individual refereed academic publications and contact lead authors in case data are not yet put into Figshare. The committee is positive about the support that is offered by UvA EB on research data management and the requirements concerning publishing.

UvA EB embraces open science and the number open access of publications has risen in the evaluation period, though less so for ASE than for ABS. In 2015, just over 30% of the publications of ABS were open access, for ASE this was just over 60%. In 2020, both schools are at 75% open access. The increase in open access publications helps the UvA as a university in working towards its 100% open access ambition, although there is still room and need for improvement. The incentive scheme to help faculty publish in open access journals through paying part of the charges is a good policy. Open access publications are not part of the promotion criteria of (junior) faculty yet. The committee suggests that this could be a way to stimulate open access further.

Academic culture
At UvA EB, academic culture is highly prized and promoted; the main goal of UvA's academic culture is to uphold its reputation of research excellence. The fact that the schools aim to be top 10 in Europe sets the tone with respect to expectations. Of course, high research expectations, such as those that clearly exist at UvA EB, require support systems. The committee sees a clear recognition of this principle, with many (especially administrative) systems in place, e.g. the support of grant applications. During the site visit, the researchers expressed their understanding and appreciation that academics within the schools are not competing against each other for tenure, as there is (theoretically) an unlimited number of associate professor positions available. The committee is pleased to learn that the competition among research staff to get tenure is absent, this will have a positive impact on collegiality and the culture within the schools. Still, the committee observed that UvA EB is a relatively pressured environment, for example given the expectations and criteria to get tenure. In the self-evaluation report, and subsequent discussion, UvA EB shows that it is aware of the importance of employee wellbeing, but struggles to convincingly showcase its commitment and subsequent results. From the interviews, the committee got the impression that the focus lies on emphasising what its employees could do for UvA EB, rather than vice versa. The committee encourages improvement in this respect. Fortunately, the committee noticed that there is an awareness of issues that need to be addressed at UvA EB level, and a voiced commitment to do better.

The committee noticed that ASE and ABS as academic structures function rather independently. It is, however, encouraged by the fact that employees are generally positive about the collegial and supportive atmosphere amongst the schools themselves. Efforts are being made to stimulate collaboration within and across schools, including the use of joint appointments. In addition, the "outside-in" initiative is viewed as facilitating multidisciplinarity, as centres promote collaboration. There is also funding available for research that crosses borders within the university. The fact that ABS removed 'penalties' (with respect to reward systems and tenure/promotion) for papers with multiple authors is a clear signal of encouraging collaboration, both internally and externally. While the committee did not obtain complete, detailed information, there does seem to be some variation across departments, in terms of aspects of the academic environment (e.g., seminars of different types – formal, brown-bag, mooting of ideas – and practices around providing friendly reviews for colleagues). There might be value in taking stock of any differences and sharing excellent practices within and across ABS and ASE.

Relevance to society

Professional support by Innovation Exchange Amsterdam (IXA) is provided concerning the valorisation strategy of UvA EB. The strategy works by way of generating societal and economic impact from academic research and connecting research projects to external parties, such as NGOs, governments, healthcare and educational institutions. Both schools aspire to achieve relevance, as they aim to contribute to businesses and society with their research. The committee is

impressed with the multiple ways this goal is achieved, in the first place by allocating research funding to four relevant and cross-disciplinary "outside-in" research themes, which serve as focal points for interdisciplinary research and collaboration with societal partners. Some of these themes have been identified together with external partners, thereby enhancing their relevance. Especially for ABS, this may offer new opportunities to step up valorisation efforts, build long-term relationships and attract new contract research and external grants. ASE maintains long established links with SEO Economic Research, an organisation conducting applied economic research on behalf of public and private sector clients. ASE is furthermore increasingly successful in attracting grant funding. Educational programmes at the Master and Executive Education level, based upon research and sometimes in collaboration with partners, further enhance the relevance of the research.

Research groups are stimulated with Key Performance Indicators (KPIs) to engage with society through communicating their research findings to practitioners' audiences. This is supported by the department's communication staff and is one of the factors considered for tenure and promotion decisions of individual staff. Consistently, UvA EB tries to attract faculty that do societally relevant research. Impact on society and valorisation are highly valued and are also part of the tenure criteria (together with teaching and research quality). UvA EB encourages faculty members to publish in newspapers and contribute to public debates, take positions in supervisory boards, advisory committees, etc. These activities clearly expand the Faculty's "outside-in" strategy.

Finally, many staff members across all levels have strong ties with organisations at the regional, national, and international level, thanks to their high quality and entrepreneurial mindset. For example, some hold board positions, while others have joint research projects. Many external stakeholders moreover hold part-time faculty positions at UvA, further enhancing the collaboration potential. While there are some well-established valorisation centres (ACLE, SEO), valorisation of research still seems to be in development, lacking a structural embeddedness in the departments despite KPIs at the group level.

Stakeholders

An upward potential in entrepreneurial attitude is visible, both in attracting more contract research and in increasing multidisciplinary collaboration. The latter also relates to the interaction between economics and business in UvA EB. While the collaboration with existing stakeholders is high, there is room to expand collaboration with a broader set of stakeholders. UvA has a comparative advantage, due to its location in a dynamic city, and it could leverage this advantage by working closer to financial and economic actors. A challenge is how to structurally motivate people to contribute to society and be relevant beyond the topic that they are studying.

The interview with the stakeholders left a very positive impression of the connections of UvA EB with key societal players (CPB, DNB, ABN-AMRO, SEO, Ortec, Bank of England). All stakeholders were very satisfied with their collaboration with the schools. It was mentioned that UvA EB has a distinctive entrepreneurial spirit and openness to dialogue with corporations, and the quality of UvA academics (faculty and PhD candidates) is considered high.

Viability

Throughout this report, the committee pointed out strengths and challenges for UvA EB regarding its viability. In general, the committee is positive on the developments at UvA EB and its two schools. In addition to the ambition to conduct high-quality research, a number of challenges are identified, both by the committee and UvA EB itself. Some of these are wider in scope than just the UvA, although UvA EB will have to look for solutions that fit its own schools. The committee

believes that the schools and faculty have an understanding of what can and must be done better and thus has confidence in a bright future for both schools. In this report, the committee hopes to contribute to the initiation or continuation of improvement measures.

ABS

ABS aims to be a 'leading European business school, producing high-quality research and education, and making a significant contribution to business and society'. Overall, the committee considers this to be a viable goal. Multiple indicators show that ABS made progress during the review period, most notably the upward trend in the publication record in high-ranked journals.

ABS has a solid and expanding research budget, with increasing direct funding due to rising student numbers in its BSc and MSc programmes, and a growing supplementary stream of earnings from executive teaching. In addition, there appears to be significant potential for growth in terms of attracting more contract research and acquiring more research grants, on which ABS has been relatively low to date. Primarily as the result of increasing student numbers, ABS has been growing quite rapidly in recent years, both in terms of the size of the faculty and the number of PhD candidates. Another significant development at ABS during the review period is the considerable investment in the growing area of data science and the focus on business analytics in all areas (including participation in the Amsterdam Data Science initiative and an alliance with the Faculty of Science at UvA), consistent with the outside-in strategy of the school. Further key developments include the establishment of the ABS Behavioural Lab and the strengthening of connections with industry and government. The committee believes that the developed care for excellent links with the business community and societal stakeholders supports the viability and potential success of the strategic research choices made. The recruitment of talented researchers, both at the junior and senior levels is another important aspect for further development. With regard to junior recruitment, the committee noted that ABS occasionally hires its own PhD graduates, immediately or shortly after graduation, as tenure track assistant professors. The committee advises against this policy. Other than that, ABS has good policies and strategies in place to attract and retain talented and research-oriented faculty.

ASE

ASE's ambition is 'to become a top-10 school in Europe in each of the broad areas micro, macro and quantitative economics.' The self-evaluation report refers to the QS World University Rankings for the subject Economics and Econometrics as a good overall indicator thereof. In 2021 ASE ranks 18th in Europe according to this indicator. The committee believes that the ambition to become a top-10 school in Europe is realistic.
ASE has a solid financial base, primarily due to increasing student numbers. An additional and sizeable fraction of the total research budget comes from research grants, between 15% and 23% in the review period. However, at the national level the second money stream is under pressure and therefore additional money may need to come from third stream sources. In this respect ASE has not increased in the period of evaluation, contract research reduced from 14% to 6% of the research budget. Most applied research is carried out at SEO Amsterdam Economics, which is affiliated with UvA but operates as an independent organisation. With the "outside-in" approach and the many contacts with stakeholders, ASE has a good starting point to work on this dimension.

As a result of an expanding budget, between 2015 and 2020 the number of ASE faculty (and corresponding research fte) grew by approximately a quarter. Most of the new hires are in tenure track positions, on average around three per year. ASE also successfully attracted a number of senior professors, among others to strengthen the societal component of its research, for example with regard to climate change. The committee

broadly supports the strategies and policies followed by ASE, seeking to build a faculty of high-quality and talented researchers. ASE commits to not hiring tenure track faculty from its own PhD candidates directly after graduating. As mentioned before, the committee is positive about the tenure criteria, being transparent and emphasising quality over quantity.

The SWOT analysis is in general sound and balanced. One of the threats, which was also mentioned in the interviews, is the salary caps for faculty, which makes it difficult to compete internationally for talented researchers and to retain them. The committee shares the view that this is a real handicap, but it is one that many universities face, in the Netherlands and elsewhere.

PhD policy and training

The PhD programme of ASE is largely organised by the graduate programme of the Tinbergen Institute. This graduate school and research institute in Economics, Econometrics and Finance is jointly operated by the schools of Economics of Erasmus University, University of Amsterdam and VU Amsterdam. Before starting their PhD, the Tinbergen Institute graduates have completed a two year research master programme, and a matching and selection process is organised. External PhD candidates are expected to finish 40 EC of coursework to get to a comparable level. By way of an annual assessment the PhD candidates' progression is monitored.
As a general extension rule, ASE has a one-year 0.5 fte teaching appointment for PhD candidates to finish their thesis. However, due to the COVID-19 pandemic, additional extension policy was introduced. The current cohort of internally funded students received a one year extension of their contract, which served to lessen some of the stress many PhD candidates experience due to the demanding nature of a PhD, and the delays suffered in the research trajectory due to the pandemic. This showcases a commitment by ASE to the mental and professional wellbeing of its PhD candidates. Over the period of evaluation, the percentage of candidates graduating within four years has increased.

ABS offers two main ways to start a PhD trajectory: through the Tinbergen Institute and by applying to a vacancy. Given the breadth of the business and management disciplines at ABS and a relatively low number of incoming PhD candidates per year, it was decided not to set up a generic PhD programme for all sections. Instead, PhD candidates follow a tailor-made educational programme that is set up by the PhD candidate together with the supervisory team. A mandatory element is a Research Ethics course.

PhD candidates at UvA EB are generally satisfied with their programme. They cited the high quality, and individualised trajectories based on their academic and research needs to be excellent. There is a division between the Economics (ASE) and Business School (ABS) PhD programmes, with each tailored to its own candidates. The majority of candidates is recruited from the Tinbergen Institute. Although the committee noticed differences between the ABS and ASE research programmes, both are very strong in their capacity to train and prepare future academic and industry personnel. ABS is actively trying to increase the number of PhD candidates, as is shown by the increasing interest in the programme. The recruitment processes for both schools are clear. There is some differentiation in coursework between the two schools, particularly for candidates with different disciplinary backgrounds, and coursework is tailored to each PhD candidate, with ASE coursework (Tinbergen Institute) being somewhat more structured. The committee has no extensive commentary on teaching obligations, except to echo the remark by some PhD candidates that the teaching could be better spread out across the academic year.

The schools mentioned during the interviews that more than other staff, PhD candidates can suffer from mental issues and more often have difficulties with acquiring an understanding of the ways of the university,

particularly if they are PhD candidates recruited from outside the UvA.

UvA EB has therefore initiated a PhD Council that represents the interests of all PhD candidates. It reflects on organisational developments that concern PhD candidates and stimulates interaction and communication between PhD candidates in different sections. Furthermore, the PhD@EB community was set up as a separate entity within the EB PhD Council. The goals of the PhD@EB community are to organise social events, increase cooperation between different departments and support and aid PhD candidates in their development. Activities include academic job market coaching, social outings, monthly drinks and PhD seminars.

UvA EB recognises that more can and must be done for the mental wellbeing of PhD candidates, despite the availability of support structures such as a psychologist, ombudsman, and mentors. It was not fully explained to the committee how, in partnership with the PhD Council, UvA EB plans on addressing these issues and reducing work and teaching pressure. In addition, a number of PhD candidates indicated that the experience of a hierarchal system can influence their willingness to discuss issues which are of concern, after which the suggestion of the appointment of an external, impartial, and confidential person (e.g., mentor) was made. The UvA ombudsperson is external to the faculty and supervisors, but apparently not all PhD candidates are familiar with the possibilities of talking to this person.

Furthermore, there is a need to improve the matching process of PhD candidates with supervisors, particularly for those candidates who are not recruited through the Tinbergen Institute and who thus lack a foundational network within UvA EB when starting a PhD. The choice to extend all PhD contracts with one year has been met with positive appreciation by PhD candidates, and illustrates the commitment by the two schools to show its support of its PhD candidates, and is fully supported by the committee.

Conclusion and recommendations

Both ASE and ABS are ambitious schools and are clearly working towards their ambition to be one of the top European schools in their fields. The clear focus of quality over quantity is important in this respect, as is the focus on internationalisation, partnerships and networks.

In some disciplinary fields, the schools are nearing their ambition, while for other disciplines there is a longer way to go. With two schools that cover a wide scope of research topics and disciplines, the committee believes that more synergy is possible, which would further boost the quality of research. The committee commends the entrepreneurial attitude it met at UvA.

There is awareness that diversity, in particular gender balance, requires attention. An explicit strategy at the level of the schools is suggested.

Finally, regarding many of the challenges and weaknesses formulated in the self-evaluation report, UvA EB refers to external factors as a cause. To a certain extent the committee agrees with this conclusion, although it stimulates UvA EB to carefully look at what it can do in order to deal with these challenges. The recommendations for UvA EB are:

- To further intensify the collaboration among faculty and stimulate the creation of a team, both within and between ABS and ASE;
- To develop a clear and faculty-wide strategy to stimulate diversity, in particular concerning hiring and retainment policy;
- To develop an explicit policy and strategy to increase retainment of mid-career research staff;
- To use the advantage of the location of UvA EB in Amsterdam to collaborate with a broader set of stakeholders.

VI. University of Groningen

Organisation

SOM is the research school of the Faculty of Economics and Business (FEB) of the University of Groningen (UG). SOM consists of two interrelated units: the Research Institute, which includes six research programmes, and the Graduate School, which includes the Research Master and PhD programmes.
The Research Institute is organised along six research programmes:

1. Economics, Econometrics & Finance (EEF)
2. Global Economics & Management (GEM)
3. Innovation and Organization (I&O)
4. Marketing (MARK)
5. Operations Management & Operations Research (OPERA)
6. Organizational Behaviour (OB)

Per September 2021 SOM added a seventh research programme, which is a separation of the I&O programme:

7. Accounting (ACC)

Each programme has a programme director who is responsible for the programme's positioning, quality and content and is involved in the admission of researchers with (associate) fellow status. The programme director also decides on the allocation of a specified amount of additional discretionary research time available in the research programme. This time can be used in strategic ways for additional tasks, like organising conferences or editorships.
The vice dean of research is in charge of SOM and responsible for all research-related matters. Within the research school, the vice dean works closely together with the directors of the research programmes to develop and implement strategy. The director of graduate studies reports to the vice dean and is in charge of the Graduate School.

In addition to the research programmes, SOM has nine centres of expertise. These consist of groups of researchers working on a specific subject, with the purpose of disseminating and fuelling scientific knowledge by working with stakeholders outside the academic community. Activities in the centres are directly linked to or embedded in one or more research programmes. Since 2016, FEB is also stimulating activities in seven 'signature areas' (SAs), multidisciplinary 'communities of practice' that emerged bottom-up from shared research interests. SAs focus on conducting high quality research for academic peers. After an evaluation of the SAs and FEBs strategic ambitions in 2020, the most successful SAs were embedded in five multidisciplinary themes that will pervade research, teaching and impact in the upcoming years. The themes are closely connected to the strategic plans of the UG to develop multidisciplinary schools.

Strategy and targets

The mission of FEB is consistent with the ambitions of the UG and is to meet the needs of the academic community and society by conducting and stimulating excellent fundamental and applied research. The committee recognizes the impressive Advisory Board of the FEB, which includes internationally renowned academic members. Furthermore, FEB aims to recruit and train talented students at research master and PhD levels and provide them with high quality programmes, excellent supervision and a stimulating international research environment, and to facilitate their placement in influential positions where they can contribute to science and the community. Finally, the FEB wants to interact with local and global partners in society and the corporate world in order to closely connect research with real-world problems, issues and challenges.

To accomplish its mission, SOM builds on its strengths, like the coherence of the Research Institute, Graduate School and centres of expertise, the strong research master programme, facilitation by the SOM Office, ties with top researchers from relevant fields and the many connections with stakeholders outside the academic community.

Based on previous reviews and along with the mission, SOM had several goals in the period of this review. These goals included strengthening the top-level research output, attracting and retaining high-quality staff, simulating multidisciplinary research initiatives, increasing external research funding, increasing the international network, fine-tuning the selection and supervision of PhD candidates, improving their placement and inflow in the PhD programme, improving the dissemination of research results, renewing the research data management policy, and installing an Institutional Review Board.

According to the committee, the school has articulated a clear mission and strategy. The committee also notices that the organisational structures that underpin the strategy and targets are rather complex. There are many centres, labels and committees in place. According to the committee, the specific profile of Groningen was therefore not very clear. The complex organisational structure might give the impression of a broad-based school with lack of focus, while the committee noticed several clear strengths that were explicitly mentioned in the interviews. The committee suggests that by making a number of flagships more prominently visible, SOM can make clear to outsiders where its strengths lie and what its profile is. Examples of flagships, according to the committee, are the data-hub, the Groningen Growth and Development Centre, the Centre for Energy Economics Research and the Centre for Public Health in Economics and Business.

Research quality

SOM selected performance indicators to operationalise the research qualities and reflect the mission, ambition and strategic objectives. Regarding research products for peers, journal publications are an important indicator. Use of peers is measured by number of citations, use of data sets and (educational) books. Marks of recognition by peers are registered as prestigious grants, awards and positions.

The committee is impressed by the quality and, in particular, the growing number of publications in the highest quality journals, the citations, and by the research performance of some of the top researchers. There has been a clearly positive trajectory regarding the research output, with steadily growing numbers of peer-reviewed journal publications. Emphasis has been placed on quality, which is reflected in the top-tier journal publications achieved—from 27 in 2015 to 41 in 2020. Approximately 19% of the publications are in top-tier journals (the field's top 10%). Furthermore, the top-tier journal publications in 2021 (thus far) show an even stronger upward pattern. This remarkable achievement has been the outcome of structural changes implemented and effective management.

SOM has promoted a quality-over-quantity-focused research policy and assessment system. Additional support is provided when there is potential to achieve valued research outcomes (e.g., an invitation to Revise & Resubmit for a top journal). In the current system of evaluation, top journal publications count the most. SOM's system of reward for achievement is based on top-tier journal publications along with the generation of impact (e.g., societal, academic/citations). As opposed to the traditional 'all-publications-count' evaluation system, the newly introduced system, recognising the ten best publications in the last five years of a research-active faculty member, is indicative of SOM's quality focus and future direction signalled among staff. This quality-focused research culture is embedded in the tenure and promotion system, and expectations are clearly communicated among faculty.

In addition, the PhD programme has been producing a steady stream of approximately 25-30 theses successfully defended per year. Academic placements of the PhD graduates (graduated between 2018-2020) reach about 60%. Clear evidence is provided for a broad set of esteem indicators, demonstrating academic reputation and leadership. For instance, faculty members have been

recognised by peers in various important ways, including editorships in leading journals, prestigious positions and awards, and international research affiliations. Faculty have been particularly successful in grant applications from prestigious sources (e.g., 6 Veni, 2 Vidi, 2 Vici). Importantly, eleven of SOM's current professors, one newly appointed professor and one emeritus professor are included in the top 2% of the most cited scientists across disciplines in social sciences, which is an impressive record for a single institute.

Based on the results, the committee concludes that in some areas, SOM is world-class, and in other areas SOM is top-quality in Europe. According to the committee, SOM could and should communicate this position more explicitly to the world.

HRM

It seems that the increasing number of students and COVID-19 put pressure on SOM, gradually resulting in less research time. However, the School makes efforts to introduce measures that support research-active staff to produce scholarly output (e.g., tenure and promotion period).
To attract good academics, a tenure track (TT) is in place, providing academics at a formative stage of their development with a career path based on clear requirements. The newly implemented TT ends at the associate professor-2 level. Furthermore, SOM is looking into participating in the university broad development on creating more diversified career paths and how academic performance should be recognised and acknowledged. In a talent development plan, the school describes its approach to talent development on dimensions such as research, education, administration, acquisition of external funding and knowledge dissemination. By offering tailored support, SOM aims to further develop the talents of its faculty.

The committee appreciates the way SOM distributes research time. Research staff indicated that the system employed is open and transparent and that teaching time is managed rigorously. Most research staff has 30-40% research time. Lecturers, involved essentially in teaching, usually also have 10-20% research time. These staff members are not required or expected to publish in top journals, but are stimulated to be involved in research activities. On top of the research time distributed by SOM, the research programme director can temporarily – up to a year – add individual research time, up to 10-15%. This time can be used, for example, to write high-quality research proposals for an ERC grant or resubmission of a paper to a leading journal. The SOM research school is growing and aims to continue attracting and retaining high-quality staff at junior and senior levels. The school has recently managed to hire – at the senior level – three female and two male professors, all of high quality. This is laudable given the tight competition in the market. In addition to the recently implemented tenure track system for research, SOM is working on the implementation of an "educational" track. The vision is to provide a long-term career perspective (growth and development path) to every faculty member.

Retention is a problem for SOM, particularly of international young talented academics who tend to go back to their home country or are attracted by much higher salaries elsewhere. This is not unique to SOM; in fact, it is a nation-wide challenge. Recognising the external constraints, the committee thinks that there is still scope for policies trying to improve retention (e.g., fringe benefits, Dutch language classes, help spouses with job hunting on a regular basis, etc.). On the other hand, SOM manages to attract young talents and provides them with an excellent research environment in which they produce relevant and rigorous research and top-tier publications. Despite the risk of leaving, these talents are valuable for SOM and provide opportunities for building a network with a broad variety of international institutions. Regarding hiring, at one point it was mentioned that the school may hire their own PhD graduates. This may not be an advisable

practice in the long run. More presence in the centralised international job market, both to place PhD candidates and to hire TT assistant professors, is encouraged. It will also help the internationalisation process of the school.

Diversity
Diversity, inclusion, and social safety are important values for SOM. Consistently, the school has set up a talent development plan to provide tailored support to each staff member. For example, to mitigate the impact of the COVID-19 pandemic on the careers of the faculty, the school has developed extension policies tailored to the circumstances faced by each staff member (including particularly PhD candidates).
With 28% female staff in 2020, gender balance is just above the national average. Nevertheless, gender balance and diversity in general requires attention. The school is aware of the gender imbalance issue and is working towards a solution with committees, surveys, and an open mind towards inclusivity. A project group on Diversity, Inclusion, and Social Safety made recommendations that are currently being implemented. The committee endorses SOM's general goal to work systematically towards a fully inclusive organisational culture, one that is ultimately to be reflected in a more diverse management.

Academic culture
SOM adheres to and supports the various formal policies to advance scientific integrity. Issues are addressed in the yearly Results and Development interviews with faculty. In addition to complying with the behavioural rules drawn up at the national level, SOM has its own regulations and imperatives. At the time of their appointment, researchers have to declare to be familiar with the VSNU-code of conduct and obey it. At the central level, the UG has five confidential advisers in the field of scientific integrity who can be consulted in case of questions or complaints.
The school is proud of its open and collaborative culture, this was clearly and visibly reflected in the interviews. Junior and senior staff and PhD candidates all show satisfaction with the academic culture, citing an open, collaborative, and supportive research environment. PhD canditates, in particular, did mention to feel included as part of the research community.

Open Science
The development of an open access policy is high on the agenda of the UG, with the library covering open access costs and clear stimulation of green open access. Thus, the open access publication policy is a key aspect of the open science strategy, with PhD theses also being available online. In particular, the committee notes that there has been a marked increase in the number of open access articles from 11% in 2015 to 46% in 2020. This is indeed impressive, although the committee emphasises that SOM still has a long way to go. In terms of their data management strategy, FAIR principles have been adopted, whereby data should be *Findable, Accessible, Interoperable and Reusable*. There is also evidence in the self-evaluation report of datasets developed for wider use, and of appropriate infrastructure being provided to researchers to store their data.

Availability and accessibility is further evidenced through the World Input–Output Database, Penn World Table, etc. Overall, it is concluded that there is an excellent open science policy at Groningen, with evidence of excellent academic and societal dissemination routes.

Relevance to society

SOM researchers actively included products for societal target groups in the dissemination of their knowledge. Examples are presentations and publications for practitioners, workshops, in-house trainings, seminars and conferences. An indicator on use of products is the amount of contract research; the outcomes of which are used by the commissioning organisation. Another indicator is the use of research outcomes in education. The final indicator, marks of

recognition from societal target groups, include memberships (e.g. in Advisory or Supervisory Boards) and funded professorial appointments.

SOM has strong research ties with local and international external stakeholders, both policy organisations and corporations. There is a clear, common but tacit vision that research at Groningen should not only meet high quality standards, but also be relevant to society. The committee is of the opinion that the research undertaken and output produced is societally relevant and is used by policy makers worldwide. According to the committee, SOM was underselling itself in this respect; its vision, aspiration and achievements should be articulated more strongly and explicitly.
SOM aims to interact with local and global partners in society and the corporate world, in order to connect research with real-world issues and challenges. Its approach to this is mostly bottom-up, through centres of excellence that focus on applied research and which have been established based on initiatives taken by groups of researchers. At the same time, multidisciplinary research is stimulated through a number of research themes. How this works out in practice is not very clear to the committee. Furthermore, there does not seem to be much in terms of support infrastructure for societal engagement. However, aiming for societal impact seems to be very much the "norm of the school" and there are several examples of highly successful collaborations and synergies between research and societal impact, e.g. with the Netherlands Authority for Consumers and Markets (ACM) and UNCTAD. Also, the construction of Input-Output Tables are being used by the OECD and EU commission to base its policy on.

Groningen seems to channel a substantial part of its societal engagement through its network of former students and researchers. This is a clear strength, descending from the geographically isolated location of Groningen within the Netherlands. Former students, PhD candidates and research staff feel a lasting connection with the University of Groningen. SOM could make even more conscious use of this large influential network.

Informal structures within SOM ensure that relevant publications are valued more strongly than less relevant publications, so that researchers are naturally nudged towards conducting research that is relevant. Nevertheless, the committee recommends embedding the societal relevance dimension more structurally in the research strategy and processes, especially in tenure and promotion decisions. Therefore, relevance and impact should be measured more explicitly, both at individual and organisational levels.

Viability

For the period 2021-2026 FEB defined goals in which developments are included, like the increasing tendency to more strongly value societal impact of research and to increasingly use more qualitative rather than quantitative indicators of research performance. At the same time, pressure on research time is expected to increase further. This and other aspects led to SOM identifying its major challenge for the upcoming years as to maintain the current (inter)national position. The main goals are to maintain the quality and recognition of the research, continue to stimulate multidisciplinary research initiatives, focus on increased impact and open science, continue to focus on obtaining external funding for research, refine and improve the research master and PhD programmes, and leverage the societal relevance of the research.

The newly defined themes are inherently multidisciplinary, timely and pragmatically relevant. According to the committee, they are essential elements in the strong viability of the school and its future research plans. Research topics are currently defined bottom-up, and programmes, themes and centres emerged somewhat 'by chance'. SOM might consider taking a more pro-active, top-down approach to defining relevant programmes, themes and centres in line with its strategic vision and the university's strategy. This would not only provide a stronger and sharper image of SOM,

but also enable SOM to continue to focus on topics where grant money is more readily available, for instance, in European or national policy programmes.

The strategy and goals are clear and well-justified for continuing to pursue high quality and impactful, important-to-society research, backed by improvements in postgraduate research programmes offered by SOM (see PhD training). SOM's rigorous evaluation system evaluating individual faculty members' research output—the ten best publications over five years, using objective research quality indicators externally developed—is a good reflection of SOM's ambition to maintain and improve quality.

SOM increasingly focuses on and secures external research funding, which is particularly relevant and important for its strong research presence and impact in the coming years. When it comes to attracting research grants, SOM is doing incredibly well. With respect to contract research and EU funding, the committee is of the opinion that there is scope for expansion. To the committee it makes sense within the research strategy of SOM to pursue this avenue. As a first class EU partner in several research areas, the committee sees opportunities in this respect.

The School has a *productivity strategy* that seems to work very well. SOM explicitly works on surrounding and supporting faculty to avoid bottlenecks that are identified in relation to their work and work-life balance in order to free up time for their core activity on publishing in highly ranked journals.
One major challenge facing SOM is attracting and retaining highly talented research staff. However, movement of young and highly performing faculty to senior academic positions at other schools, often overseas, reflects a significant contribution to the academic community and a strong research culture within the school. Junior faculty is stimulated and supported to grow and develop into high quality researchers. Nonetheless, the challenge of retention can potentially undermine the school's high-quality research productivity and impact and should remain a continuous point of attention.
While SOM does a lot of work on societal relevant topics, there are not many formal procedures in place to incentivise impact. The organisation is aware of this, the school does not have a clear *identity* in the sense that "who are we" and "what are we good at", was not clear from the report. This message could be elaborated on to present a clearer view of what SOM stands for to the outside world.
The large influx of students in recent times may put some pressure on research time and the potential cut in funding (Van Rijn report on the funding of higher education and research) may further increase the workload of staff. The Research Assessment system may help SOM/FEB to ensure that workload is spread such as not to endanger productivity.

SOM has an open and collaborative academic culture and its connection to alumni and the building of networks has helped it to get a strong social stakeholder network. This allows SOM to attract PhD funding from outside and to develop long-term relationships with local and international players in the private and public sectors, and this can be strengthened further. The development of long-lasting powerful collaborations with entities like UNCTAD, public policy makers and government departments, hospitals, international academic institutes, and companies puts the school in a strong position to augment its external research funding activities.

The Institute has responded to COVID-19 in an appropriate and proportionate fashion, in an attempt to ensure that research-active staff members are not adversely affected by the pandemic. Faculty informed the committee that they think SOM and FEB were supportive and generous, although they warn that some groups or individuals might suffer the consequences in the future. In particular, faculty with young families and those who were already struggling to combine research and teaching might be affected by the long-term consequences in the longer term.

PhD policy and training

The Graduate School of SOM consists of three tracks. In the first track (2+3), PhD candidates first finalise the two-year research master's programme (120 EC), followed by a three-year PhD track and a 5 EC educational programme. In the first year, the candidate works on the development of a research proposal that must be approved by the Scientific Committee of SOM. The second track, the four-year programme, is aimed at PhD candidates without a research master's degree. In addition to an educational programme of 45 EC (15 EC compulsory), they also have to advance a written research proposal in their first year. The third track, the part-time PhD programme, is for individuals who aim write a thesis next to their regular job. Phase 1 (two years) is course-based, and consists of 30 EC and the writing of a research proposal. In phase 2 (on average four years) they continue with the actual development and writing of the thesis.

Approximately 40-50% of PhD candidates are in the 2+3 PhD programme. More students are recruited externally for the other parts of the PhD programme, e.g. the scholarship programme. The business analytics and econometrics track of the research master's programme was discontinued, but candidates still have access to all courses and resources, should it be necessary.

For all tracks the final product is a PhD thesis, either a monograph or a coherent collection of (usually three) research papers or journal articles. The PhD programme is overall both academic and practice driven, and there is an effort to recruit PhD candidates to work on specific research topics, stimulating multidisciplinary research, and stakeholder engagement. PhD candidates are encouraged to spend time abroad if possible.

The committee notes that PhD candidates start in cohorts, which is good for building support and collegiality. The structured monitoring process is comprehensive and extensive, with a clear focus on the future ambitions of the PhD candidate. The coursework is tailored to the individual PhD candidate, with each candidate – depending on the track – needing to take a mandatory set of courses to be sufficiently prepared for a PhD.

There is a PhD Council that is consulted by SOM management, but is not included in Board meetings. One PhD candidate, however, is part of the faculty council, an inclusion which the committee supports. PhD candidates indicated that they feel listened to. Teaching seems to be an issue of concern, as the switch to online teaching (during the lockdown) resulted in PhD candidates teaching more than specified in their contract. The committee appreciates that efforts are made to compensate the additional hours. The committee is satisfied with the support structures in place to help PhD candidates, although the sample of interviewees was too small to adequately assess its efficacy. However, the committee does recognise that PhD candidates often see their supervisors as the first point of contact when it comes to personal and professional problems, after which proactive help is provided.

There are possibilities to ask for extensions, with many PhD candidates receiving an additional three months after their contracts end. Some interviewees did not feel that this was enough time to compensate for the delays due to COVID-19, despite the option being available to apply for parttime teaching positions while finalising one's PhD. The committee recommends that PhD candidates be better informed about the extension criteria and how this works.

Job market preparation already starts in year one of the PhD programme, and there are two placement officers to assist PhD candidates. The preparation includes training to go to the international job market.

Conclusion and recommendations

The positive impression the committee had, based on the self-evaluation report, was confirmed and extended in the interviews. The

research is topical, and SOM is engaged in research with industry. The school takes comments and feedback seriously, as it can be observed from its response to the recommendations of the previous assessment and the fact that it put in place a lot of new procedures related to more recent goals including diversity and gender balance, the placement of PhD graduates, etc.

Furthermore, the committee encountered a school with an open culture, one that clearly expresses its aspirations and focuses on research quality as well as on societal impact. There are several world-class departments, others are at European top levels; overall, the quality of the research output is impressive. Despite SOM being an internationally competing research school, it should and could do a better job in 'selling itself', for example, not only by focusing on flagships that demonstrate SOM's strengths, but also by reconsidering the specific names of its research centres.

The positive review of past performance includes elements that should remain in the upcoming period. Examples for this are the focus on a limited number of recent publications for tenure and promotion decisions, the possibility to have more research time through past publication success, and the possibility of the research programme director to provide more research time on a discretionary basis (e.g., for grant writing or for an important revision and resubmission). Furthermore, SOM is actively working on acquiring sufficient internal and external resources.

The recommendations for SOM are:

- Continue working on the shift from traditional to more modern assessment criteria. Prioritise working on criteria regarding rewarding societal relevance.
- Although awareness about the gender imbalance is clearly present and a work-group is in place, there is room and urgency for further action.
- Give attention to marketing SOM beyond the region: Who are they and how are they being perceived? What is SOM known for? This should lead to awareness of SOM's activities and contributions and strengthen its international standing.

VII. Utrecht University

Strategy and targets

Vision and mission
Utrecht University School of Economics (USE) is one of the three departments that jointly constitute the Law, Economics and Governance Faculty (LEG) of Utrecht University (UU). Established in 2003, USE is a relatively young school. From the start, it has developed a distinctive focus on multidisciplinary economics. By combining economics expertise with insights and perspectives of other disciplines and by linking academic rigour to societal relevance, the school hopes to play a part in identifying fresh solutions for present-day problems that extend beyond the context of economics. USE's mission is to contribute to an economy where people flourish by taking a broad view on welfare and all factors involved, adopting a 'real-world perspective'. Cooperation, innovation and curiosity are seen as core values. USE's vision and mission have been translated into a number of priority goals related to the inflow of students, the structure of education, financial viability, the improvement of research (impact) and creating new value.

The committee highly appreciates USE's clear and differentiating vision and approach, which was described in very similar terms by all those involved, thereby accentuating the coherence of the school. Moreover, the committee found USE's approach well aligned with the mission and strategy of UU as a whole. Much like USE, UU is committed to working towards a better world by researching complex issues beyond the borders of disciplines.

Organisation: themes and sections
Research at USE is organised in a single research programme: 'Multidisciplinary Economics'. The strategy is to focus research on four main themes:

1. Future of Work (FW), focusing on the changing nature of work through innovation, digitalisation, and globalisation. The theme analyses the broad implications of these issues, usually from a microeconomic perspective. Since the previous review of 2015, the smaller theme on Behavioural Insights for Policy Making has been merged with FW, which uses the same methodology.
2. Entrepreneurship (ENT), aimed at analysing entrepreneurial ecosystems, innovation, digital platforms, intrapreneurship, economic development, and sustainability.
3. Sustainable Finance (SFIN), centering on the role of financial markets in the stability and prosperity of economies, government, and organisations, ranging from fintech and sustainable investments to financial stability and regulatory issues.
4. Sustainability & Economic Development (SED), focusing on the needs for the transition towards a more sustainable society in combination with human economic development processes in line with the 17 United Nations Sustainable Development Goals (SDGs).

The committee considers these four broad, multidisciplinary themes as highly consistent with the USE mission. From the interviews it emerged that all actors understand the strategy, from PhD candidates to senior staff and external stakeholders. The themes are relevant and reflective of the work that is being done at USE. Adding focus is seen as an appropriate strategy for a small school that cannot be active in every single field of research. While focused, the themes are still sufficiently broad to allow all staff to connect with the themes. Moreover, the themes are well embedded in UU-wide strategic themes (such as Institutions for Open Societies and Pathways to Sustainability) and UU focus areas (such as Complex Systems and Professional Performance). This adds to the position of LEG within the university at large, with the potential flipside of limiting training options of master's students as well as USE's flexibility in developing promising new areas of research. The school is aware of this possible

downside and the committee trusts that it is sufficiently agile to adapt to changing internal and external demands.

The formal responsibility for research at USE lies with the dean of the Law, Economics and Governance Faculty. In practice, this responsibility is largely delegated to the head of department and the research director. The USE Management Team is in charge of the daily running of the department. Following the advice of the previous assessment committee, the organisational structure of the department was simplified in the reporting period. In 2017, USE replaced its former and rather complex management structure organised around 17 chair groups by a new system comprising four sections: Applied Economics (AE), Economics (ECO), Entrepreneurship (ENT), and Finance (FIN). The research institute (USE-RI) consists of representatives of the four sections, who advise on research strategy and policy and monitor the quality of research. In cooperation with the LEG board of research and in consultation with the section heads, USE-RI develops research policy, organises research events (like seminars and workshops), monitors research quality, stimulates funding applications, organises the personal conference budgets, and advises the head of department about the allocation of research resources.

The committee was told that the recent organisational simplification has much improved the cohesiveness of the research institute: the sections (around 20 staff members each) were said to be large enough to facilitate regular interactions and community building amongst staff, while being small enough to avoid a silo effect. In the committee's opinion, maintaining internal cohesion while at the same time avoiding isolation from other organisational units within LEG and USE is rightfully an important objective of the management. The committee recommends to periodically review the current structure in terms of its efficacy and fitness for purpose and adjust it where necessary.

Research infrastructure

In the interviews, staff indicated that they are satisfied with the level of administrative support, which is (mostly) organised within the Faculty Support Office (FSO) at the level of LEG. These facilities, importantly, include assistance with grant applications. Staff stressed that grant applications remain highly time-consuming and have a slim chance of success, but at the same time they described support staff as knowledgeable on the different funding tools available to researchers and providing very welcome services, for example in preparing budgets and sorting out practical details.

Staff were also positive on data management policies and facilities, which are set at university level and include a research data management strategy (2019) and UU's digital vault for personal data (YoDa). They appreciate that teams are being formed at individual faculties to deal with tensions and particular challenges that arise at the faculty level. Attention for GDPR has been growing since 2018, but as elsewhere, researchers struggle with GDPR and are in the process of developing good data management and Open Science research practices.

Research integrity

To spread awareness on research integrity issues, LEG has established an Ethics Assessment Board, which answers questions on informed consent, the invasiveness of research for participants, power analysis, and confidentiality of data. At both Faculty and University level, scientific integrity counsellors are available for confidential consultation on academic integrity, including a staff advisor, an advisor for inappropriate behaviour, an advisor on research integrity, and an advisor for whistle-blowers. PhD candidates can also consult the PhD ombudsperson should they experience any problems. It was also reported that integrity and ethical dilemmas are frequently discussed at USE and faculty meetings. The committee concludes that the level of training on research integrity is a strong feature: seminars on the topic are

available to all staff members, and even mandatory for supervisors and full professors.

Diversity
The committee notes that diversity is taken seriously at USE. The school is aware of shortcomings and challenges and is considering ways to properly address them. As yet, diversity is mostly defined in terms of age, nationality and gender but in its future efforts USE also plans to focus on increasing diversity of staff in social, cultural, ethnic, and sexual background or orientation, aiming for a staff that reflects society at large. Relative to 2014 there has been a rejuvenation of staff members, with the share of staff members of 45 years or older falling from 52 percent in 2014 to 36 percent in 2020. The international profile of staff is on target with about 45 percent non-Dutch members overall.
USE's share of female staff is slightly higher (35%) than the national average in Economics (27%), but the department recognises that there is still a long way to go before equal representation is realised. Over the review period, progress has been limited to achieving gender equality amongst PhD candidates and a slightly higher representation of women amongst post-docs and assistant professors. At more senior levels, women are seriously underrepresented (14%). Nonetheless, USE has some female role models, including the dean of LEG, who is one of the top female economists in the Netherlands. The school hopes to increase diversity amongst female senior staff to 21% in 2025. In the interviews, promoting young female talent was described as a particular point of improvement. Staff indicated that more attention should be given to supporting junior female talent to progress to the next stages in their career. Mentoring and coaching could be further developed as instruments for talent management. The committee encourages USE to follow up on these observations by staff.

A promising initiative that was mentioned is the newly established Equality, Diversity & Inclusion (EDI) taskforce, which was started as a one-year initiative in line with the UU-wide EDI programme, but will likely be extended. The committee met with several female members of this taskforce and was pleased to learn that time is allocated for membership. It is, however, not fully clear to the committee how this committee functions and is structured, and how it collects relevant data (focus groups, workshops, interviews, surveys etc.). While this was not the purview of this evaluation, USE could benefit from a comprehensive and systematic dissemination of information related to its policy on equality, as well as the resources available to staff when problems are encountered.

Quality

Output
From the data provided, it is clear to the committee that all four USE research themes work on leading edge topics that cross disciplines. The list of key publications submitted by USE confirms the strong focus on multidisciplinary economics. As part of the multidisciplinary approach, USE researchers collaborate and publish with researchers from different disciplines (i.e. Law, History, Mathematics, Sociology). The USE journal list therefore includes journals rooted in a range of fields. A particularly nice example of multi-disciplinary work is provided by the theme FoW. The department's academic output mainly consists of peer reviewed articles, book chapters and working papers. Since the previous review period, USE has been able to attract a number of high-quality researchers who have strengthened its research profile.
A Google Scholar citation analysis done by USE indicates that the impact of research output and, arguably, its quality increased over the review period. According to USE, this analysis gives a more complete picture of the number of citations than the jointly commissioned CWTS analysis, which is based on a narrower range of research output (such as provided by the Web of Science). Following a recommendation by the previous committee to increase exposure in top journals, all four themes have improved their performance in this respect. Publication in higher impact

journals on average doubled for the top ten percent journals and tripled for the top 3/2/1 percent journals. The themes ENT and FW score somewhat higher on high-citation impact publications than SED and SFIN. As a relatively young department, USE is still rising in the rankings. Currently, it ranks 76th in Shanghai Academic Ranking of World Universities.

The committee notes that the share of Open Access publications has rapidly increased from 19% in 2014 to 75% in 2020 (32% in Hybrid journals; 23% in Gold Open Access journals; 20 percent is of the Green type in repositories). Staff indicated that funding for OA publishing is increasingly available, but some tension was said to remain around publishing in – what is in the committee's experience a diminishing number of – top journals that are not Open Access. This is the subject of talks with the central UU-level.
All research themes include high performing senior staff members whose articles, books and reports attract many (100-1000 and in some cases even 1000+) citations. These 'star' researchers regularly receive marks of recognition, such as prizes, awards, grants and professorships paid by societal groups. They are invited to give lectures and talks and are members of scientific and advisory bodies and editorial boards. During the site visit, the committee also met with talented young researchers who hold great promise for the future of USE – should the department be able to retain them past the level of assistant professor. While it is clear to the committee that some researchers are doing excellent work, it wonders whether research quality is spread evenly across the entire staff. Differences in staff's research quality may lead to tensions, as evidenced by mixed reviews of the current research incentive scheme (see below, *Research Incentives*).

Collaboration
The embeddedness of its research themes in university-wide strategies ensures that USE is well-positioned for research cooperation within UU. Mindful of its multidisciplinary character, USE collaborates with the two neighbouring departments within LEG (Law and Governance) and with other UU departments (History, Geography, Mathematics, Sustainable Development, and Social Sciences). There are also collaborations with other academic and societal partners (universities, research institutes, ministries, local governments, firms, multinationals, international organisations).

International academic cooperation is potentially a point for improvement. The management described the school's 'glocalist' approach as building a base in the Netherlands while at the same time connecting to international schools. In the committee's opinion, the latter part deserves further elaboration. While there is some collaboration with internationally leading academics and institutions in the developed and developing world, the number of structural international contacts appears to be limited. Existing collaborations seem mostly the result of (international) staff coming in with their own networks and contacts.

Academic culture
Staff interviewed expressed satisfaction with the overall culture, describing it as supportive and collaborative, but emphasising that efforts could be made to improve this collegiality, particularly in the form of a more regular exchange of ideas and insights. On the whole, the committee has the impression that USE should invest in strengthening the academic culture within the department. The seminar series is less developed than in schools with a longer research tradition. A more active seminar series with more outside and international speakers, and organised around the four main themes of USE is recommended to enhance visibility in these topics. This issue is recognised by the management, which aims to increase the number of international seminars from 16 to 24 per year and the number visiting scholars from 2 to 8 per year. During the site visit, the management also expressed the wish to increase editorial board memberships, which is seen as a good

strategy to broadly promote the validity and visibility of USE's 'real-world perspective'. The daily working culture at USE is to some extent the product of a traditionally masculine culture. Some female staff raised concerns regarding the use of gender-biased language and actions during meetings and interactions, which does not contribute to the promotion of an inclusive and safe work culture. However, USE has acknowledged the structural change required to address these issues and has appointed gatekeepers to monitor and guide the situation. As mentioned earlier, promoting diversity is firmly on the agenda.

Competitive funding
USE researchers have had limited success in acquiring competitive funding from second stream funding sources (NWO Veni/Vidi/Vici, ERC). The department's budget consists of about 65% direct funding, 29% contract research, and 6% percent research grants (rising from 2.6 to 7.6 percent). USE aims to improve its score by stimulating grant applications, by providing seed-money, organising counselling and feedback sessions and by providing training on the societal impact side of research projects. This, according to the committee, is an appropriate approach. The external EU funding from H2020 opens the possibility of entering into new multidisciplinary research alliances. While international competition for consortia grants is fierce, USE has recently been successful in this area and is currently in the process of submitting more research proposals. The committee recommends leveraging USE's strong impact on policy and valorisation, which is an aspect that funding agencies are attaching increasing importance to.

HRM
The committee concludes that, also in terms of HR policies, USE has a clear plan, which is coherent with its mission, vision and priority goals. The school has chosen to build its staff around the four research themes, which evolved over time, along with staff hires. The implementation of USE's strategy begins at the recruitment and selection stage. In the interviews it was stressed that USE aims for recruits who match the real-world perspective profile of the department, endorse its philosophy, and have connections with institutions that could eventually become partners.

With a stable research staff of 45 research fte's (80 staff members) in 2020, USE is smaller than most of the other schools in the Netherlands. While there is a good number of assistant and full professors, the number of associate professors is small, due to historical reasons. This lack of mid-career professors may unduly increase the teaching and managerial load of assistant professors. While the focus has been on hiring new staff at the assistant professor level – over the review period sixteen staff members started a tenure-track assistant professor position – hiring some associate professors might establish a better balance in experience among staff members, ultimately having a positive impact on research output. The committee also noted that the number of PhDs has declined, which is a trend that should be monitored closely. Like elsewhere, student numbers are growing at USE, while staff capacity lags because of the two-year funding gap. A particular challenge is to avoid that the ensuing high workload (teaching and admin, societal involvement etc.) affects research. The interviews with staff underlined that staff need breathing space and that structural reforms are required. As financial means become available in the coming years, USE plans to decrease the student-staff ratio by appointing dedicated teaching staff, thereby safeguarding the research time of tenure track/tenured staff. This is in line with the objective of differentiating career paths, but only if teaching staff are given comparable opportunities in the field of professionalisation and promotion as research staff.
The committee was informed that staff have access to training facilities, including a compulsory UU leadership course for senior staff. Interviewed staff mentioned that they benefitted from this substantial half-year training programme, where they were able to

exchange experiences with staff from a broad UU context. The options that are available are discussed annually in performance interviews.

Research incentives
USE recognises pluriformity in talent and allows the development of different career plans that can also change with time. The MERIT model that is used to evaluate staff for the purpose of development, career growth, promotion and career development comprises five domains: management, education, research, impact and team spirit. Each staff member is evaluated on all aspects and expected to excel in some respects. The RAAS point system is a specific USE system to evaluate research output and its quality. The system has evolved over time, with a recent (2020) move to more highly reward publications in top journals to further encourage research excellence. The RAAS score is calculated at the beginning of each calendar year based on the publications in the previous five calendar years. Points are earned either through publishing articles in international peer reviewed journals or through writing or contributing to books. The interviews emphasised that, even after the recent changes, not all staff members are happy with the RAAS point system, since it does not give the same amount of weight to top-5 publications as other incentive systems which are internationally in use.

The committee points out that, in a worldwide competition for top talent, USE assistant professors might be hampered by the expectations to contribute to five dimensions (the MERIT criteria) for tenure and promotion. They may feel disadvantaged compared to their peers who are enabled to solely focus on top quality research. Some junior staff clearly stated that they fear that their focus on long-term top-quality research, which might only be published after the tenure period, will not be adequately honoured by USE. This may lead to a lower retention of star researchers, to which Utrecht is particularly vulnerable as there is a narrow base of high-quality researchers publishing in top journals.

The committee concludes that more counselling and guidance on this issue is needed. It wonders whether USE might be better off with a system that acknowledges existing quality differences and allows for more variable outcomes. The committee questions whether all staff should focus on all five MERIT criteria, or whether some could be allowed to focus on a more limited number of criteria. Relatedly, those very successful at attracting funding could perhaps be allowed to reduce their teaching load below the current minimum of 30%. This would enable highly successful junior faculty members to focus more on research and would be more in line with practices in other economics departments.

Relevance to society

From the documentation and interviews the committee concludes that societal engagement is highly important to USE. All four themes were quick to embrace collaboration with societal partners and have made substantial progress in terms of societal impact. The themes are aligned with the UU Strategic Themes and their underlying hubs (including the Future of Work, Social Entrepreneurship, Energy in Transition) and some of the themes have emerged from cooperation with external stakeholders. Important examples include projects on combatting tax abuse and money laundering (COFFERS) and experiments to guide people on social assistance towards paid work (Weten Wat Werkt, in collaboration with the Municipalities of Utrecht and Zeist). USE researchers have furthermore built an entrepreneurial society (FIRES), introduced the better wellbeing index (BWI) in collaboration with RaboResearch and focused on entrepreneurial ecosystems and regional development. A number of projects (e.g. on effective delivery of integrated Interventions in early childhood, connections between climate change and conflict) contribute towards the SDGs.

The committee established that the development of long-term relationships with societal stakeholders is encouraged, even

though relations can in practice prove difficult to sustain. Given the small size of the department, some of the collaborations with external stakeholders are strongly dependent on one individual staff member and as such not structurally embedded in USE. Other collaborations are more mature and more strongly embedded in USE, being able to survive even after the initiators have left.
The interviews highlighted that USE increasingly targets non-traditional sources of funding as it collaborates with societal partners. There is momentum and enthusiasm amongst staff for this type of fundraising, but USE recognises that it takes time to properly develop such efforts. According to staff, there is seed money and some support for setting up relations with societal partners, but the department could operate more strategically when it comes to building its network. The committee particularly found that there is potential to connect more to the local ecosystem, which offers opportunities for an increase of contract funding.

The committee was impressed by the evidence of co-creation that came across from the interview with stakeholders: societal partners come to USE with their research questions and co-design the research. Various societal partners fund professor chairs (e.g. GAK: Economics and Institutions and Employment and Inequality), and PhD projects (e.g. TNO, Tony Chocolonely). Questions could be raised on whether all of this leaves USE researchers enough room for curiosity driven research. However, the school is aware that there may be differences between researchers in the way they deal with societal engagement, and that this engagement should always start from scientific work.
Relevance is a key dimension in recruitment, promotion and tenure decisions. The management stressed that hiring people who have an affinity/experience with this type of research sustains the system. Staff is coached towards disseminating research and interacting with external stakeholders and there is support staff to help with communication and with interactions with stakeholders (to some extent). As mentioned above, the committee is in favour of a certain level of diversification. Expecting everyone to do everything is not necessarily productive. Not everyone has to be involved with stakeholders if their strengths lie elsewhere. USE acknowledges that there is room for improvement in the way societal impact is communicated to the outside world. Social stakeholders confirmed that staff must divide their attention among so many responsibilities that the dissemination of findings does not always receive the attention it deserves. Improving this could mean that USE is easier to find for potential future collaborators.

Viability

The review period produced evidence of an increasing quality of the output and a growing societal impact. While USE is small and therefore somewhat vulnerable to changes in funding and staff, it is also flexible and has a remarkably coherent vision and clear strategy that is well engrained amongst management and staff. Nonetheless, the committee also identified a number of challenges that USE will have to appropriately deal with in the coming years, mostly related to staff retention, workload, research incentives and diversity. A particular challenge that USE faces, is to keep and foment an intellectual atmosphere, especially regarding the number and the frequency of seminars and seminar participation.

Resources
Given the strong focus on relevant and broad research themes, there is a clear opportunity to increase the second and third streams of funding, which are still at a rather low level. Further raising the research profile of the department and developing international connections should help to improve future chances of success, although the committee also realises that grant application is increasingly competitive and time consuming. The committee especially feels that more could be done to attract ERC grants. By talking to social partners, the committee realised that there is an opportunity to further expand the third money stream by

collaborations in the local community on the four focus themes.

Growing student numbers will eventually enable the school to invest in broadening its research and increasing its research staff. The committee particularly feels that staff composition is currently too narrow on the level of associate professor, which seems to be related to retention issues. Staff that wants to fully focus on high level research may feel better off at schools that give more weight to research quality than to societal impact. Going forward, a specific challenge is to find a way to measure academic impact in absolute and relative terms, and especially to incorporate the DORA principles in the evaluation system for researchers.

Strategy for the future

USE's strategy for the coming period is to uphold its mission and vision, while continuing to build its staff and further increase research quality in the four themes in which it hopes to become world leading. The school will focus on scientifically rigorous and societally relevant research, with an openness to new developments within/related to the domains and to multidisciplinary collaborations. USE particularly plans to expand investments in data science. USE furthermore hopes to accelerate societal impact with matching of (PhD) research projects that are (partly) externally funded, and increasingly use the UU hubs and other research centres to increase engagement with external (societal and scientific) partners.

With a self-reported estimate of 10% yearly growth in student inflow until 2025 and a two-year delay in the associated funding, USE expects its financial base for research from the first stream of funding to expand considerably in the next six to ten years. Possibly this can be complemented with efforts to increase the volume of the second and third stream of funding. This would imply great potential for increasing the size of USE, possibly in other directions than the current four research themes. Expanding into new fields is not so much part of USE's strategy for the future. Rather, the school aims to 'intensify the focus in hiring and teaching in the four USE domains'. Further, while data science is mentioned as a possible new area to be developed at USE, at present plans in this direction do not seem very concrete. In view of the potential considerable growth of the school in the decade ahead, the committee encourages USE to strategically think about expanding its research beyond, and possibly far beyond, the current core areas of research. In addition, a larger and more diversified school would enhance stability and help to subdue the relative fluctuations currently seen in staff numbers, PhD candidate numbers, and funding through contract research.

PhD policy and training

The USE PhD programme is part of the LEG Graduate School. For internal candidates it typically consists of the internal two-year research master's programme Multidisciplinary Economics (ME) followed by a three-year PhD trajectory, while external PhD candidates follow a four-year programme. Faculty guidelines (2018) are available for both categories of PhDs. UU introduced a digital tool (MyPhD) for monitoring formal aspects of PhD tracks in 2019.

USE favours an individually tailored PhD trajectory as opposed to a standardised structure for all PhD candidates. There is no standard course curriculum due to the influx of students from both research master and non-research master tracks. PhD candidates who have not graduated from the ME programme can select research master courses to prepare them for their PhD trajectory. As a result, the PhD programme is heterogenous in its structure, and while the benefits of a tailored PhD programme are clear, the committee recommends developing a standardised course structure which will cater to all PhD candidates, strengthening the theoretical and methodological foundation needed to complete a PhD trajectory. USE's focus on four research themes offers an excellent opportunity to go beyond a course structure at

the research master level, and to also develop a more structured core curriculum at the PhD level. Using the Training and Supervision Agreement as a basis, more concrete and sustainable course options can be established, along with a more structured and regular supervisory meeting schedule, which interviewed PhD candidates felt were lacking. Acknowledging the small number of PhD candidates that the committee spoke with and the individual supervisor-PhD candidate relationship dynamics, it is advisable that USE offers a training course for (prospective) supervisors on how to be effective and supportive supervisors to young researchers. USE offers the services of an independent ombudsman for PhD candidates, but concerns have been raised regarding the impartiality and confidentiality of the ombudsman, as he/she is often a senior member of staff. The committee supports the recommendation of PhD candidates for the availability of an external and confidential ombudsman where possible conflicts of interest are minimised. Based on the documentation, the committee is unsure which mental health and other support services are available to PhD candidates, and it is recommended that in the case of an absence of such structures, they are established and made accessible. A PhD council is in place and serves as a cohort support structure for PhD candidates, with one PhD candidate from economics occupying a position as PhD representative on the USE board.

The committee is satisfied with the teaching load assigned to PhD candidates. It also notes that candidates are generally satisfied with the labour market preparation offered, such as career talks, writing workshops, and the PHACE programme. PhD candidates made mention of the usefulness of networks they have access to via their supervisors, as they often have links to practice, and can assist them in establishing their own networks. Nonetheless, the committee concludes that career services are very informal, with experiences likely to vary from supervisor to supervisor. The committee would prefer to see a more formal structure being put in place. The impact of COVID-19 on PhD candidates has been substantial, and many expressed that clear and detailed information on the possibility of extensions was not currently available. As a rule, USE assesses whether an extension can be granted on an individual basis, with PhD candidates only being eligible closer to the end of their contract period. To reduce stress amongst PhDs, better communication regarding this is required.

Conclusion and recommendations

USE is a relatively small-scale school with a differentiating vision and approach anchored in multidisciplinarity and bridging the gap between scientific impact and societal relevance. The school's mission and research themes are well-embedded within the larger context of UU and find support amongst the staff. Organisational renewal effected in 2017 was found to have improved internal cohesion and research support is at the right level.

As a relatively young school, USE has clearly succeeded in further strengthening its profile over the reporting period. Since the previous review, the multidisciplinary approach has matured and resulted in joint publications with researchers in a range of disciplines and outlets. The share of Open Access publishing has seen impressive growth and the number of articles published in top journals has also increased. Across the board, USE is doing well in terms of societal relevance. There are impressive examples of collaboration with societal partners leading to substantial progress in terms of societal impact. Given the strong focus on relevant and broad research themes, there is a clear opportunity to increase the second and third streams of funding, thus facilitating further growth and making the department less vulnerable to fluctuations. Distinct ways to enhance the research culture within the department include developing a more ambitious seminar series and increasing international collaboration.

While the committee is supportive of differentiating career paths, it feels that USE

could aim for a more even spread of research quality across staff. In recent years the school has been able to attract a number of strong researchers and talented juniors, but retention is an issue and there seems to be a gap at the level of associate professor. Hiring at mid-career level may result in a better balance in experience among staff members, ultimately having a positive impact on research output. USE may also wish to reconsider its research incentive system, which does not seem to fully acknowledge staff's investments in long-term top-quality research.

The committee was pleased to find that staff have access to substantial training facilities. More attention could, however, be given to supporting junior staff – especially female talent – in their career progression by way of mentoring and coaching. Further structuring the small and currently rather heterogeneous PhD programme also seems advisable.

The committee offers the following recommendations:

- To increase its international visibility, the school is advised to expand its cooperation with international academic partners. Establishing a more active seminar series with more outside and international speakers would help to strengthen the internal academic culture. If the ambition is to become a world-leader in chosen domains, then the strategy towards achieving this ambition should be explicit and coherent.
- USE is advised to increase its second- and third-stream revenue, particularly aiming at ERC and EU consortia grants and contract funding available in the local ecosystem. Combined with the expected increase in direct funding, this would facilitate growth (in terms of staff and the bandwidth of research) and - ultimately - bring more stability.
- In order to enhance the credibility towards external partners, it is advised to cooperate more with other departments in the university. UU is a very well-respected university in the local ecosystem, and this is something for USE to capitalise on. Maintaining stronger links with alumni might also help.
- To avoid getting too far out of line with international incentive schemes (and thus potentially hamper the professional development of staff), the conditions and effects of the RAAS point system should be continuously monitored and adjusted where necessary. A certain level of diversification in the criteria that individual staff need to fulfil is advised. Furthermore, the committee advises to credibly address the high teaching load, not only for the assistant professors but also for the more senior professors. Specialisation in the profile of the professors should be allowed; not everyone has to be good at everything.
- USE should consider hiring at the level of associate professor as this might establish a better balance in experience among staff members, ultimately having a positive impact on research output. To achieve a better representation of women in senior roles, the school should recruit additional female associate professors and promote/support junior female talent in their progression through the ranks. Mentoring and coaching could be further developed as instruments for talent management.
- USE is encouraged to further structure its PhD programme, implementing a more regular supervisory meeting schedule and developing a standardised course structure to strengthen the theoretical and methodological foundation of all PhD candidates. More formal labour market preparation should be part of this.

VIII. Vrije Universiteit Amsterdam

Organisation

The School of Business and Economics (SBE) is part of the Vrije Universiteit Amsterdam (VU Amsterdam). SBE is managed by the faculty board and chaired by the dean, who is responsible for research, teaching, and operational management. The vice dean of research is responsible for the research policy at SBE. The Scientific Committee consists of representatives of all the departments, is chaired by the vice dean of research and offers advice on research policy.

The ten academic departments are each headed by a full professor and are the primary intellectual homes of the researchers. Since the previous research review the number and composition of departments has changed, reflecting the attention to emerging fields like data science and digital innovation and the growth of multidisciplinary research. The ten academic departments are:

1. Accounting;
2. Economics;
3. Econometrics and Data Science;
4. Ethics, Governance and Society;
5. Finance;
6. Knowledge, Information & Innovation;
7. Management and Organization;
8. Marketing;
9. Operations Analytics;
10. Spatial Economics.

Research at SBE is divided into business and economics (including finance and econometrics) research, supported by two research institutes that offer postgraduate training and PhD supervision and contribute to an environment conducive to high-quality research: Amsterdam Business Research Institute (ABRI) and Tinbergen Institute (TI). Similar to the descriptions in the self-evaluation report, SBE is reviewed as a whole in this report. Where there are relevant differences between business and economics, this is explicitly mentioned.

Strategy and targets

The mission of the VU Amsterdam is rooted in three core values: Open, Responsible and Personal. Building on these values, SBE has its own mission: Science with Purpose. SBE is a research-oriented business and economics school that aims to contribute to academic, business and society at large. SBE emphasises the synergy between research, teaching and societal impact, and encourages faculty to have a triple orientation.
In line with its mission, the strategic aim of SBE is dual: generate scientific impact and societal impact. Other aims concern the means to do science with purpose: attract and foster talent, train promising PhD candidates and acquire research funding. The final strategic aim is to encourage open science and scientific integrity.

The committee has a strong sense that the various aspects of the school's strategy are aligned. In terms of research incentives and ensuring time for high quality research, the committee notes that research quality, societal relevance/impact, and teaching are all part of the reward system. In particular, promotion opportunities are based on excellence in research, teaching, *or* impact, which offers more pathways to career development.

Research quality

Between 2015 and 2020, in business (ABRI) the number of articles published annually in the top quintile of journals rose from 37 to 102 (or from 1.2 to 2.3 per research FTE), while in economics (TI) it rose from 82 to 108 (or from 2.0 to 2.4 per research FTE). According to the committee there is a clear strategic aim to produce high quality, innovative research, and clear evidence that SBE is achieving this aim by producing high quality research outputs. The focus on quality over quantity is highly commended – and it is great to see that the reward system (including the allocation of research time) is consistent with this focus. This is demonstrated by VU's well-considered

approach to ‘counting’ and rewarding research output. In particular, there is evidence of an impressive increase in top-tier publications over time, demonstrating a very good academic publication record, both quantitatively and qualitatively. There are increasing fractions of publications in the 20% best journals (based on the article influence percentile). This increased quality is particularly striking for research in business and seems to be the result of a shift of culture. The tendency to publish more selectively is also visible in the following figures: in business, between 2015 and 2020 the share of papers published in the top quintile of journals rose from 24% to 50%; in economics it rose from 35% to 58%. The list of key publications further shows that SBE researchers contribute to the very best journals in their field (AIP>0.95).

The research was already at a very high level and this has been further strengthened over the last years. Therefore, the committee concludes that SBE is doing very well, which is further supported by evidence of editorial roles in very good international journals, as well as top academic awards and prizes.
In the self-evaluation report it is mentioned that high quality research generates scientific impact. Research time allocation and tenure and promotion decisions build on an objective and transparent system for the valuation of publications. Research time allocation to tenured faculty is based on proven quality and quality is favoured over quantity: only the five best publications in the previous five years are counted. Work that is published outside top journals can have significant impact as well, one publication can therefore be evaluated based on citations. The generation of scientific impact by SBE researchers rests on three core principles: quality, autonomy, and community and international networks.

In line with SBE’s emphasis on quality rather than quantity, the self-evaluation report focusses on publishing articles in the top quintile of journals, as defined by the journal’s article influence score percentile (thus, with AIP>0.80). The system of the valuation of publications is transparent and objective: using article-influence score percentiles (AIPs). The system allows staff to earn up to 50% research time, with 40% being typical. There is a similar system for promotions; in that context researchers also have to explain how their publications fit the overall research profile (international connections, editorships, etc). Although SBE researchers seem to be taking the right actions to continuously build the academic reputation, it was mentioned in the interviews that the reputation of VU as an institute seems to be lagging behind its research performance. The committee appreciates that efforts are being made to assist and stimulate SBE’s (and VU’s) reputation, to catch up with the high quality of the research that is being done. The committee sees approaches such as employing a better marketing strategy, ensuring that papers are open access, and using the VU name more consistently.
There is scope for encouraging collaboration between the economics and business sides; among other benefits, this might yield some highly innovative work that could be reputation-enhancing. Except for incidental and some personal relationships, there seems to be somewhat of a disconnect between the two schools when it comes to interaction and collaboration. A couple of examples came up in the discussions, but they seemed more ad hoc than systematic. Given the importance of multidisciplinary research, the committee feels that there is scope for considerably more internal collaboration between the business and economics sides. There is potential to enhance both research and societal engagement. For example, once the COVID-19 situation resolves to a steady(ish) state, it would be good to resurrect the innovative-sounding seminars that bring together one speaker from each side to address a single topic.

SBE considers embeddedness in an academic community and international networks essential to strengthen research capabilities and have scientific impact. Research is increasingly becoming a team effort. This is observed, for example, by the establishment

of labs across the faculty. Participation is stimulated through incentives, not by imposing it. The SBE departments are communities that provide critical mass in this respect and can – for example – be used for shared research infrastructures, reading clubs etc. While VU Amsterdam seems to be a highly competitive environment, no formal hierarchy is experienced, and instead the atmosphere is open, collegial, and supportive. Researchers are also encouraged to build their international academic networks through collaborations, conference participation, research visits etc. International networking is facilitated by way of a visiting professor programme and seminar series. It is clear to the committee that embeddedness in the international academic community is part of the vision on research quality. Thus, there is evidence of strong collaboration with a mix of stakeholders and networks of international scholars, which supports this strategic aim. Independence of scholars is valued strongly at VU. SBE is convinced that autonomy initiates new and promising research questions that lead to making influential contributions and collaborations in a stimulating environment. The committee agrees that this academic independence enables researchers to make autonomous decisions to adapt their research to emerging topics.

HRM

VU Amsterdam recognises that, in order to perform well, it needs to invest in its staff, which it is doing. To attract and nurture high-quality researchers, an inclusive and stimulating environment is provided. SBE recruits internationally and at various levels, offers extra opportunities for female scholars and offers development paths for all. The latter aspect includes the clear specification of criteria for teaching, research and impact for tenure and subsequent promotion stages. Whilst most staff are recruited via the tenure-track route, there is also a policy to recruit directly to associate and full professor to strengthen academic leadership and provide fresh research impetus for emerging research fields. The committee notes the challenge (a country-wide phenomenon) of hiring talented researchers from the competitive international market. However, retention of talented researchers seems to be less of an issue for SBE compared to other Dutch schools, which speaks well to the high-quality environment that it provides. The committee noted that the research staff with whom it spoke, seemed to be very happy to be part of VU and SBE. That said, salary caps and teaching loads do present some challenges for retention on the economics side. While salary issues are difficult to address, teaching load is something that can be managed internally. There is also a clear policy at SBE, which is highly commended, to not appoint its own PhD candidates.

With respect to research, the approach of considering each faculty member's five top publications over a five-year window emphasises the focus on quality over quantity. It is interesting that research time is allocated to departments, as opposed to individual researchers, which allows for some discretion – and smoothing – to be exercised by the department head. This is also consistent with the vagaries of the processes associated with targeting top-tier journals. The committee also heard that teaching is often done in blocks, which makes it feasible for academics to have focused research time that is relatively uninterrupted by other tasks. This is critical for ensuring that research time is protected.

Funding

At SBE, grant acquisition is stressed as increasingly important to the viability of research programmes and faculty careers. The faculty board has formulated expectations about grant applications to research councils. Similarly, the criteria for promotion to associate professor and full professor specify requirements concerning funding from ERC or NWO. Researchers receive support in the application process from the Research Office and the VU-level Grant Office. Furthermore, support is offered by SBE for collaboration with industry and government and obtaining external funding from these sources.

In the review period, research grants constituted between 20% and 27% of total funding of SBE's research in economics. This is very high, in particular when considering that contract research also contributed a high fraction (between 22% and 26%) of research funding. In business, the composition of research funding is somewhat more variable, with research grants between 6% and 13%, and contract research between 11% and 24% of annual research funding. The committee believes that the growth in quality of SBE's research in business is not (yet) fully reflected in a corresponding growth in the acquisition of research grants: the mid-period (the years 2017-2018) was relatively successful but the two most recent years (2019-2020) less so. There appears to have been a gradual shift towards relatively more contract research in business over the review period. Nevertheless, the committee is impressed with the high number of prestigious research grants acquired by SBE researchers in business and economics combined: six Veni, five Vidi, two Vici, and one ERC consolidator grant.
The committee established that grant-seeking is valued, as also reflected in the requirements for tenure and promotion. SBE developed guidelines and indicators on how impact is valued in promotion criteria. However, from the interviews the committee understood that the way in which scientific impact related activities are rewarded is not yet sufficiently transparent for all staff members. This aspect requires attention to make sure that the policy and reward system is not merely in place, but that all staff are aware of the policies as well.

Diversity
An important aim for the coming years is to further increase diversity in the SBE faculty, by intensifying efforts to analyse the causes of imbalance and design corrective measures. There are regulations for female researchers in the tenure track system. This led to an increase in the number of female associate professors to 22% in 2020 and of full professors to 16% in 2020. Furthermore, over the last two years ten women (and nine men) received tenure. Despite these increases in percentages and the fact that the situation is not unique to this institution, diversity remains a concern to the committee, especially for the economics side. There is impressive (gender-based) diversity among more junior researchers, but less among senior faculty. The committee notes that management and academic staff are very aware of this issue and work actively on ways to deal with these challenges.

Hiring at the junior level is overwhelmingly international, which increases national diversity. It was particularly good to hear about the taskforce that has been set up to look into diversity and inclusion.
There is evidence of clear policies to improve diversity and address gender issues, with specific opportunities for female scholars, and some really strong initiatives to promote gender diversity and improve the gender balance. Women get longer to complete tenure, for example to compensate for maternity leave. In one of the interviews it was noted by a researcher that paternity leave should be given equal weight to maternity leave in this regard.

Open Science
SBE's policy to foster open science focusses on open access publishing, research data management, and open research practices. SBE's goal is to attain 100% open-access publishing in the very near future. In fact, at the time of writing of the self-evaluation report, this goal was nearly reached, which the committee applauds. For example, of all SBE's journal articles published in 2019, 86% is available in some form of open access. This number further increases to 97% for the subset of articles published in 2019 with SBE-affiliated corresponding authors. Importantly, since 2020 SBE incentivises open-access publishing by making open access availability a requirement for publications to count for research time allocation (not for promotion). Furthermore, in cooperation with the VU library, SBE made it easy for researchers to make articles and book chapters publicly available through an institutional repository

(green open access) six months after the publication date, relying on the Taverne amendment. The committee fully supports these initiatives, including the little nudge to make open access mandatory to count for research time.

SBE embraces the ongoing movement in science towards full replicability of scientific research. It notes that SBE researchers are increasingly adhering to open research practices such as the preregistration of studies and the sharing of data, code, and other replication materials. Further, SBE researchers play a key role in (co-)creating open data platforms (e.g., Geoplaza, ODISSEI, FIRMBACKBONE) and (co)-organising open science initiatives (e.g., Fincap). To foster open research practices, a course on experimental research methods encourages PhD candidates to preregister studies and warns them against questionable research practices such as HARKing and p-hacking. At a more general level, SBE organises faculty-wide information and discussion sessions to promote research transparency and openness. With regard to the principles of FAIR data, SBE has made the first principle (Findability) mandatory to make published research count for research time allocation (unless a data confidentiality agreement prohibits this). The number of datasets registered in PURE by SBE researchers increased from less than ten per year in 2015-2018 to more than forty in 2020. The committee appreciates the rapid evolution at SBE towards more open research practices. At the same time, there is still a long way to go to make all published research at SBE systematically replicable to the maximum extent possible. The committee encourages SBE to continue working towards this goal. Research Data Management (RDM) policy has been ratified and implemented in the school since 2017, and SBE has formed a Research Ethics Review Board to assess research proposals, offer advice and establish research ethics guidelines. In 2020, an online self-check tool was introduced. The committee was impressed with the idea of an online self-check tool, which might remove some of the bureaucracy out of the research ethics process, which can otherwise delay the start of time-critical research.

With the RDM, SBE is seeking to foster research integrity, data security, and data re-usability. A data steward was appointed to support researchers regarding all aspects of data management, including data management plan writing, advise on data storage and archiving, and RDM training of PhD candidates. In addition, four privacy officers were appointed and trained to support and advise SBE researchers on GDPR and data processing regulations

Relevance to society

The ‘Science with Purpose’ mission aims at generating a positive impact on the work and the lives of others, from local engagement with organisations in the Zuidas business district to global contributions to sustainable development goals. The core principles of SBE are synergy between scientific and societal impact, variation in pathways to societal impact and the provision of supporting structures.

The mission of SBE is linked to VU’s core values: open, responsible and personal. SBE considers societal impact to be an integral part of research and strives to build structural collaboration with partners. At the university level, four multidisciplinary themes should help to provide focus. Some very interesting examples of this were given in the self-evaluation report, and further explained during the visit, e.g., the spatial economics research that is addressing parking and pricing policies and the allocation of students to high schools. The recent appointment of the Associate Dean for Engagement, along with the development of an Engagement Support Office, are both positive steps that should help researchers to reach out and may be especially helpful in creating continuity in relationships with societal partners.

There is clear evidence of societal impact and collaboration with external organisations, for example the involvement with ORTEC in the

design of optimal plans for cash distribution. The strategy of becoming involved in the boards of grant-giving organisations, with the goal of helping to set the agenda, makes sense. Research staff are stimulated to reach out and societal impact is taken into account in career track and promotion decisions. Although the criteria for this are specified, attention to a transparent implementation is required. The committee was also unclear about how much of the income derived from external stakeholders is consultancy-driven versus how much is research-driven, and whether there is an issue of viability around these income streams.

Clearly, SBE is already quite successful in attracting contract research, which for both the economics and the business school accounts for 25% of funding. The economics school, in addition, is also impressively successful in gaining grant funding. Several examples were provided of successful collaboration. However, as with other schools, the actual measurement of impact remains difficult. The committee expects that, similar to most schools, interaction with stakeholders is likely to play a more prominent role in the future, especially in the context of societal engagement and research funding. Aligning workload and reward systems may effectively encourage researchers to maintain deep engagement with external stakeholders throughout projects with external partners. In addition, adopting a more interdisciplinary emphasis may allow SBE to take better advantage of the research opportunities offered by external engagement.

Viability

The strategy for the upcoming period will be to continue and extend the course that has developed over the last years. This includes continuing to produce high-quality research by maintaining performance evaluation policies that emphasise quality over quantity. More attention will be paid to the visibility and citation impact of publications. Also, attention will be given to further increasing research time available, enabled by the growth of student numbers in recent years. SBE furthermore aims to increase the percentage of external funding. Recently, a grant officer was hired to better support researchers seeking to acquire external funding.

The committee evaluates the viability of SBE in relation to its strategic targets as excellent. SBE has a solid organisational structure and leadership, adequate incentives, and a broadening financial base due to upward tending student numbers, grant money, and contract research. The committee discussed the rapid growth of the number of students during the visit. While this is certainly challenging in the short run with respect to both teaching loads and budgeting, the growth bodes well for SBE's viability. In particular, the economics school does well in attracting research grants; this may present knowledge-sharing and collaboration opportunities, with respect to developing similar success on the business side.
In terms of external engagement, the committee was unclear regarding valorisation; this could be something to consider moving forward. For example, it would be useful to consider how to measure the impact of various research activities on the KPIs of the external organisations with which the school is working; this would be useful for the organisations and a good selling point for SBE.

The SWOT analysis and the strategic plans for the next six years are realistic and self-critical. Among the weaknesses, the SWOT analysis notes that international rankings indicate that SBE's reputation lags behind its objective performance. SBE acknowledges that women are underrepresented in the higher academic ranks and that, while international faculty diversity is quickly increasing, ethnic faculty diversity is lagging behind. SBE commits to intensifying its efforts to reduce these imbalances and to increase faculty diversity. Other strategic plans for the next six years include leveraging synergies between research and engagement with business and society, similar to the Spatial Information laboratory and the KIN Center for Digital Innovation (and supported by the recently founded

Engagement Office); to intensify grant applications, in particular to the Horizon Europe programme (supported by a further professionalised Research Office); to reduce PhD delays and drop-out rates, and to improve PhD placements (supported by further development of ABRI workshops and possibly by collaboration with other universities). The committee views all of these as attainable goals.

Notwithstanding its generally strong viability, SBE is worried about the declining direct government funding for teaching and research. In the Netherlands, the domain of economics and business has the highest student-staff ratios, leading to increased work pressure. The committee shares these worries and echoes them. Economics and business faculties cannot reasonably be expected to deliver ever improving teaching and research with declining per-student budgets.
In conclusion, the committee formed a very favourable view of SBE overall, both in terms of its research success to date, and the future academic viability of the school. This view is based primarily on SBE's mission and goals, which are clearly articulated and seem to drive what happens. This was evidenced during the interviews in which colleagues expressed a shared vision of what is meant by the well-articulated Science with Purpose strapline and is highly commended by the committee. In particular, there is an excellent SWOT analysis, which is realistic and shows excellent foresight of leadership. It raises specific challenges for the future, including aiming at the acquisition of increased external research funding as a key ongoing strategic objective; and an intention to increase the research time that faculty have available, via increased student numbers – hence by teaching income further subsidising research activity. It was also good to hear that efforts are being made to assist the development of SBE's reputation, more generally, to catch up with the quality of the research, through approaches such as employing a better marketing strategy, ensuring that papers are open access, and using the VU name more consistently. The committee agreed that this is an important aspect of future strategy.

The bottom-up approach – allowing researchers to work on issues that interest them – came through clearly in all of the interviews. However, the committee wondered whether future budgetary constraints might create the need for more focus, especially with respect to grant applications. Finally, the committee felt that viability of societal impact was less clear, and suggests that more systematic valorisation of research impact along with a clearer engagement related staff reward system will be important pre-requisites to ensure the long-term viability of this key part of the VU's strategic aim.

PhD policy and training

The doctoral programmes at SBE are organised at ABRI and Tinbergen Institute (TI). These programmes aim to well-equip PhD candidates for pursuing promising careers in research, either at a university or outside of academia. Each PhD candidate has at least two supervisors who are expected to be closely involved and co-responsible for a project. First-time supervisors are encouraged to get training on supervising PhDs. SBE furthermore has two doctoral directors (one at TI and one at ABRI) who monitor and support PhD candidates. These directors have yearly meetings with the PhD candidates, are available for counselling, offer supervisors advice on selection and go/no-go decisions, and feasible work plans for each PhD trajectory. They are also supporting PhD candidates and supervisors to create effective Training and Supervision Plans (TSP).
PhD candidates are represented in the SBE PhD council, which is considered a valuable lynchpin between the PhD community and the faculty board, in particular when dealing with the consequences of the COVID-19 crisis. The PhD council seems to be an influential body, and there also is a PhD representative in the Worker's Council.

Tinbergen Institute
TI is the graduate school and research institute jointly operated by the schools of Economics and Econometrics of Erasmus University Rotterdam (EUR), University of Amsterdam (UvA) and Vrije Universiteit Amsterdam (VU). TI has over 150 research fellows and over 200 PhD and research master students. The three participating schools have largely delegated recruiting, selecting and training of the future PhD candidates to TI. Collaboration within TI creates economies of scale in setting up and maintaining a selective and competitive research master's programme in Business Data Science. Annually, TI selects 25-30 students from over 300 applicants. The TI programme offers a wide array of field courses and supervision is available in almost every field within economics. The two-year research master's programme leads to an MPhil degree. The graduate subsequently receives a three-year appointment at one of the participating faculties as a PhD candidate. Graduates of one-year master's programmes can receive a four-year appointment as PhD candidate. These PhD candidates have to select courses from TI's two-year research master's programme of at least 30 ECTS. A final group are external or part-time PhD candidates, who apply throughout the year with a short proposal. This group is not employed by SBE.

At the start of the PhD trajectory, a TSP is put together by the supervisors and the PhD candidate. After one year of employment, the supervisors evaluate the performance of the PhD candidate, using a university wide HRM review instrument. In case of a positive evaluation, the contract will be extended for the remaining two or three years.
TI organises job market training for all TI affiliated PhD candidates. TI has a placement director and offers a number of services, like workshops, mock interview sessions and alumni events. There is travel budget available to attend international job market meetings.

Amsterdam Business Research Institute (ABRI)
ABRI has developed a coherent set of courses, workshops and training events that allow SBE to recruit, train and place PhD candidates of promise in their fields. ABRI has been transitioning from a research master's programme followed by a three-year PhD programme to an integral, four-year PhD programme, combining coursework with a dissertation phase. This allows better coverage of the needs of the diverse sub-fields represented in ABRI and makes it easier to recruit PhD candidates from regular master's programmes. Each of ABRI's six research tracks has developed a structured curriculum drawing from a shared portfolio of courses, in combination with courses offered by other graduate schools and national training networks. Each PhD candidate needs to receive at least 30 EC of training. PhD candidates are required to be active members of their research community by regularly participating in research seminars, giving presentations at international academic conferences and are encouraged to develop teaching skills.

Each year SBE funds five ABRI PhD positions in business. Candidates are selected via an open competition. In addition, there are PhD candidates working on externally funded projects; these are selected by their future supervisors. Similar to TI, ABRI offers external/part-time PhD candidates the opportunity to start a PhD trajectory.
ABRI consistently monitors the progress of the PhD candidates to ensure steady development and avoid delays and dropouts. A TSP is developed by the PhD candidate and the supervisors, after which it is discussed with the ABRI doctoral director. A yearly update of the TSP is part of the annual assessment process. At the end of the first year, a go/no-go decision is made by the supervisory team in consultation with the doctoral director.

There is a series of mandatory workshops on 'how to build an academic career'. ABRI facilitates and stimulates PhD candidates to

spend time abroad, to build a wider network and find academic jobs more easily.

Overall evaluation of PhD training and policy
Although the internally funded PhD programme is rather small (five candidates in economics, five in business per year), the overall group of PhD candidates is large with 88 PhD candidates in total in 2020. There is especially quite a big Executive PhD programme.

The Research master track that feeds into both PhD programmes (Business Data Science) appears structured and concise, is heavy in terms of workload (30 EC), and prepares PhD candidates well for a PhD trajectory, after which coursework can be individually tailored, and PhD candidates are also encouraged to take courses at other universities.

In both schools the PhD candidates informed the committee that they are satisfied with the support and mentoring offered, and candidates often continue with the same supervisor in their PhD as they had during their research master programme.
An interesting point that came up was that the dropout rate after 9-12 months was very low. This is not considered a major concern, although the schools would prefer PhD candidates to discontinue their PhD earlier rather than later. Beyond the 9 months, the dropout rate does appear high. Reasons for this may be that PhD candidates receive job offers from business and industry, and are thus not able to finish the PhD. VU might consider to more comprehensively track the reasons why PhD candidates choose to discontinue, for example through the use of exit interviews.

As with other schools, teaching is limited to 20%, but PhD candidates mentioned to the committee that due to inexperience with teaching, they easily over-prepare and thus spend more time on teaching than necessary. The committee learned that SBE offers a course to give PhD candidates tools to teach effectively. According to the committee, it would be advisable to encourage PhD candidates to follow it.

A point that was less extensively discussed was the availability of mental health and support services available to PhD candidates. Given the high workload and pressure to perform well, the committee emphasises the importance of these support structures. SBE is recommended to make sure that they are well-known and that PhD candidates are encouraged to make use of them.
Job market preparation seems to be adequate, especially the activities that are organised by TI. It appears that TI will actively place its graduates on the job market, as evidenced by the high placement rate. Both schools offer generous budgets for PhD candidates to travel and attend seminars and conferences.

Conclusion and recommendations

The committee overall feels that SBE is doing very well. SBE has a clear view on what it further wants to improve, and overall the view of the committee on the performance of the school is very favourable.

In line with its mission of ‘Science with Purpose’, SBE’s dual strategic aims are to generate scientific impact and societal impact through high-quality empirical and theoretical research in economics and business. The aim of generating scientific impact translates into publishing in top academic journals that maintain the highest standards of rigor and novelty. Over the review period, SBE has been increasingly successful along this dimension. Societal impact takes various forms, from research communication to non-academic audiences to structural research collaborations with companies and governmental partners, often through research institutes at the SBE or VU level.

To pursue its strategic goals, SBE has a set of policies and incentive schemes in place regarding international hiring, tenure and promotion decisions, merit-based research time allocation (up to 50%), female career

development, diversity in career paths, and open-access publishing, among others. The committee considers these policies and incentive schemes to be effective, robust, and future proof. An important characteristic of SBE's policies is to give maximum autonomy to its researchers, thus reinforcing their intrinsic motivation. Departments and individual researchers in particular set their own research agendas and choose their research methods and publication targets. The incentives, designed to generate high-quality research, operate in the background.

The committee has the following recommendations:

- There is scope for more collaboration between the economics and business sides, in particular given the importance of multidisciplinary research.
- Despite clear attention to improving the gender balance, diversity remains a concern – in particular for the economics side – that requires continuous attention.
- Continue with the development of clear criteria to measure and reward impact and societal relevant activities.

IX. Overall conclusions and recommendations

General comment

The COVID pandemic unfortunately made it impossible for the international committee to come to the Netherlands and perform an on-site evaluation. Although the digital interviews and discussions with representatives of the participating institutes were informative, it was not always easy for the committee to get the full picture of the institutes. The combination of short meetings, many institutes and a large committee is challenging enough when an onsite visit is conducted, let alone when the site visit takes place online. Online interviews, although informative and helpful, sometimes lack the depth necessary to really grasp the issues at stake. Further, the time for the committee to discuss its findings amongst each other was limited, as the schedule was dictated by time differences and thus included few internal committee meetings. Informal dinners were also sorely missed. The committee would have highly valued spending more time on each institute to get a more in-depth picture of the contents of the high-quality relevant and rigorous research carried out there, the best practices established in, and the challenges facing each institute. Having said that, the committee has nevertheless been able to get an overview of the research in Economics and Business that is conducted at the seven participating institutes. In this chapter, the committee provides some general observations and recommendations.

Research quality

The committee is generally impressed by the quality of the research undertaken at the seven schools, both in economics and in business. All schools improved their position in terms of quality of publications, international leadership and reputation. Organisational structures and productivity strategies have led each department on an upward trend on the targeted objectives, which is applaudable.

Most of the schools have developed a clear publication strategy – generally aiming for peer reviewed articles in top-tier journals and prioritising quality over quantity. The view that it is better to publish fewer papers but publish them in better journals is one that the committee fully endorses. As part of the SEP methodology, the schools have each chosen their own quality indicators for the research that was produced, its use by peers and the recognition that it received. The most commonly chosen quality indicator for the research performance is – unsurprisingly – the number of publications in highly rated scientific journals, with citation metrics being applied to highlight the use of research results. In both respects, the schools are clearly doing well. The quantitative data presented to the committee demonstrate that the number of articles published in higher-rated journals increased substantially more than the total number of articles published in refereed journals. In some schools there were even twice as many articles in top-tier journals in 2020 as there were in 2015. This is an impressive accomplishment, since worldwide competition for publishing in top-tier academic journals is mounting. The upward trend in publication quality appears to be most visible for research in business, at least as far as the reports distinguish between economics and business research.

The committee found that the level of the increase in top-tier publications across schools is not easily comparable, since the participating schools do not use a common definition to classify journals according to quality. While the CWTS report provides a general overview of the scientific impact of the research by analysing citation trends, individual self-evaluation reports hardly refer to this analysis. Instead, they use a range of self-chosen metrics, including the article influence score (AIS), often with different percentile cut-off values. It would be helpful and informative as well if the schools could deploy journal quality and citation metrics that are more widely accepted.

As a side remark, the committee notes that not just the number of (high-quality) publications, but also the number of faculty rose over the past five years, so *a priori* one might expect a proportional increase in research output (at any given level of quality). At the same time, though, student numbers also rose considerably, requiring more effort to be spent on teaching while educational funding comes with a two-year lag.

Research incentives

Since all schools recognise the importance of emphasising quality over quantity, they put a lot of thought into the design of a bespoke incentive system to promote high-quality research among individual researchers. Several of the incentive schemes are based on the past article production in a five-year window, with good research being rewarded with dedicated individual research time and playing a key role in tenure and promotion decisions. Often, departments have some discretionary power in distributing aggregate research time among their researchers, for instance to smooth out discontinuities due to publication dates falling just in/out the five-year window.

It is the committee's impression that researchers are generally happy with the incentive system in place at their school. Staff that the committee spoke with seem to perceive the system as transparent, fair, and effective. Also, in most schools the majority of the researchers appear to be able to secure 40% research time, although, for full professors, and depending on the school, it seems more difficult to secure that amount of research time.

The principles underlying the incentive scheme are basically the same across schools and include both research and teaching performance. Increasingly, schools also include societal relevant activities and/or impact in the incentive schemes. Details, however, vary substantially across schools, for example, regarding the number of best articles that are taken into account (which operates directly on the quality-quantity axis) and also regarding the way journal quality translates into weights. So, to the extent that researchers act on incentives (which the committee believes they do), one should expect different outcomes for different schools. And this is indeed what the committee observed across the schools. In general, steeper incentives for high quality tend to go hand in hand with publishing in the higher-rated journals (and typically publishing fewer papers). Therefore, within certain limits, schools have the power to move along the quality-quantity axis.

This does not necessarily mean that all schools are recommended to increase their incentives in terms of research quality. Schools may rightfully choose to incentivise other dimensions: contributions to societal relevance, teaching quality and/or leadership. In practice, this is increasingly happening in many schools, and is welcomed by the committee. It was equally pleasing to find that schools are well aware of the challenges associated with rewarding and recognising hard-to-measure aspects such as societal impact. Further substantiation is clearly in progress. The committee values and welcomes the ongoing reflection on how to incorporate and measure impact in terms of (for example) societal relevance in the evaluation of individual researchers. At the same time, several schools recognise that academics cannot reasonably be expected to excel along all dimensions (e.g., research, teaching, societal impact, leadership) and allow for differentiation in career paths, with excellence in one or two dimensions and minimum requirements in the other. Here, further reflection will be needed and is ongoing. Summing up, the committee emphasises that (different) choices can be made, and that incentives are a powerful tool for steering (types of) outcomes.

In the same vein, the committee noted that the chance to meet the tenure criteria at the end of the tenure period varies substantially across the schools. Of course, this mainly has to do with the criteria themselves, which are stricter in some places than they are in others. The

percentage of staff fulfilling the criteria at the end of the tenure track does not warrant general conclusions about staff quality, or other aspects such as the level of support offered. Yet, chances of meeting tenure may obviously affect the composition of the faculty in the longer run, and are possibly compounded with a selection effect. Once again, this leads the committee to the conclusion that schools must make a conscious choice that matches their ambitions and objectives.

A well-documented concern regarding the national ambition to change academic career assessment is whether the Dutch schools should move alone in reforming the recognition and rewards systems for academics. Staff mentioned during the interviews that they experience tensions between local incentive systems, with their increasing emphasis on multiple academic dimensions, and international systems that to some extent tend to more prominently reward research excellence. Expecting staff to do well in other dimensions as well may hamper their career prospects outside of the Netherlands.

Societal relevance and impact

All institutes place growing importance on societal engagement and impact, and they do so in many different ways. Among other things, societal relevance tends to be more deeply embedded in the strategic goals than was previously the case, for example by seeking to contribute to the realisation of the UN sustainable development goals.
Despite the differences across schools, a common observation is that the schools put serious effort into reflecting on how to augment the societal relevance of their research. Sometimes this takes the form of an almost collective bottom-up reflective process on how to single out research directions and opportunities with societal impact. In other cases, the approach is more top-down, for example, by attracting excellent senior researchers to lead an important research programme with high societal relevance. Still another approach is to utilise the incentive system to nurture research that is societally impactful, while fully preserving the individual autonomy of researchers. The committee is pleased to notice that several schools have the ambition to measure societal impact in a more systematic way, despite the difficulties in doing so.

Whatever the approach and strategy, the committee appreciates the expansion of research in societally relevant and impactful directions.

Nearly all schools included a meeting with stakeholders in the programme. These meetings reflected the increased attention given to societal engagement and impact. It was also clear that some schools are further along in the engagement with stakeholders and are more proactive and entrepreneurial than others.

Open Science

The committee notes that SEP purposefully refrains from giving a clear definition of Open Science, as this movement is still very much in development and definitive classifications are hard to come by. To give some guidance, the protocol links Open Science to aspects such as the involvement of stakeholders in research, FAIR data practices and Open Access publishing.

The lack of a clear-cut definition was to some extent reflected in the self-evaluation reports. All schools clearly have an idea of the principles that constitute Open Science, but it is perhaps somewhat early to expect a fully crystallised vision on this topic. Nonetheless, the committee found that all schools have made considerable progress regarding Open Science, including open access publishing, preregistration of studies, and data sharing. Attention is required for systematically replicable publication of research, like data files, code for all data processing, data cleaning, data analysis. It also includes a proper description of all steps (replication files).

Regarding open access publishing, the committee recommends all schools to fully

exploit the 'Taverne amendment' to the Dutch copyright law. Open access publishing is supported by the requirement made by research councils that projects funded by grants should result in open access publications. Further, journals are increasingly providing the option to publish open access for a fee. This includes the top-tier journals in economics and business. According to the committee, this implies that the percentage of open access publications could and should further increase in the upcoming period. Important in this respect is that schools develop a policy on how to deal with the additional costs.

Resources

In terms of funding for research, the committee observed relatively large differences across the schools, sometimes within the same university. In all schools, direct funding (generated as a surplus to the revenue from regular teaching programmes) is the main source of research funding, currently amounting to between 50% and 90% of the total research funding within a school. Given the rising student numbers and the two-year delay in educational funding, the volume of direct funding will, almost certainly, increase in the very near future, implying that more can be spent on research. On the other hand, there are several uncertainties: student numbers can be volatile, and several schools have expressed worries about the ongoing decline in direct funding per student. It follows that heavy reliance on direct funding is not without risks. The committee encourages the schools to think about the stability of their sources of research funding, and, if possible, to diversify these in order to ensure greater robustness against adverse shocks.

With respect to grant acquisition from national and international funding agencies, the committee sees substantial differences across schools. Depending on the school, research grants account for <5% up to 25% of total research funding. Many (if not all) schools have set up an office that provides extensive support to the authors of grant proposals, and often compensation is given in terms of reduced teaching time to compensate for the time spent on grant writing. The committee notes that grant acquisition is often seen as an indicator of research excellence, despite recent debates and criticisms. The committee is aware that, in particular, for ERC grants and NWO Talent Scheme grants, the competition is fierce and success rates low. The committee does not want to take a stance in this debate, but does note that some schools appear to have the potential to do better and should try to put more effort into grant writing. The share of contract research also varies considerably across the schools, ranging from approximately 5% to 40% of the total research funding. Contract research presents a strict broadening of the financial base of the schools (which is somewhat less the case, in the aggregate, for NWO Talent Scheme grants, whose sum is fixed). Furthermore, contract research reflects engagement with societal and industrial partners. In the opinion of the committee, this is definitely a positive aspect. In addition, as an independent source of funding, contract research may enhance financial stability. One aspect of potential concern that the committee has, is that contract research should always have a solid academic research orientation. It should not be equivalent to consultancy work for industrial partners.

It was made clear to the committee that the domain of economics and business has the highest student-staff ratios in the Netherlands, leading to increased work pressure. The committee shares the worries expressed by the schools and echoes them. Economics and Business faculties cannot reasonably be expected to deliver ever improving teaching and research with declining per-student budgets.

Diversity

The committee established that the evidence presented on diversity is usually limited to information on the gender balance and representation of different nationalities within the schools. While the focus on gender and nationality of course represents a narrow view of diversity, the approach in itself makes

perfect sense. The committee notes that in the Netherlands it is unlawful to register an employee's ethnic or cultural background. This leaves research units with the uneasy task of having to describe their diversity policies without being able to back them up by robust data.

On the whole, it is safe to conclude that women and minorities are (still) severely underrepresented in the disciplines of economics and business, both relative to the general population, as well as in comparison to other academic disciplines. The average representation of women in economics departments currently stands at just 27%. Senior ranks in particular tend to be predominantly male. The committee established that the management teams of the schools are well aware of this issue – and indeed have been for quite some time. While some schools take demonstrable and targeted action to remedy the gender imbalance, this does not apply to all schools, at least not to the same extent. Processes to guarantee a better gender balance in the future (e.g. re-evaluation of hiring practices, including the composition of committees, offering unconscious bias training and considering the gender balance on short-lists of vacancies) are often still absent. The committee's overall feeling is that the gender imbalance is not consistently perceived as a critical problem, even when the imbalance is large. This is regrettable, and the committee cannot help to conclude that schools do their employees and themselves a disfavor by not seeking to remedy the underrepresentation of women. There is an acute lack of female role models, with consequences for the academic culture within schools and the leadership styles that are adopted. Even in financial terms there are negative aspects associated with a lack of action on this front. Here, the committee points to the EU Commission's decision to make the development and implementation of gender equality plans at the institutional level a mandatory eligibility criterion for all institutions who apply for Horizon grants with deadlines from 2022 onwards.

In terms of internationalisation, most schools are doing quite well. Over time, and with the development of English-taught degree programmes, the composition of staff has become substantially less Dutch. Most schools recruit their junior faculty on the international market, ensuring a constant influx of non-Dutch researchers from around the world. The committee appreciates this practice. Typically, more than 50% and up to 80% of new junior faculty hires are non-Dutch.

Academic culture

Due to the choice of a virtual site visit, it was somewhat difficult for the committee to get a good picture of the academic culture within the schools. Academic culture is not easy to describe on paper and is undoubtedly better seen and felt during live conversations than during online interviews. Certain subtleties may have been lost as a result.

Despite the comments made above on the action required in terms of promoting gender diversity, the committee is pleased to note that all institutions are actively fostering an open, inclusive, and safe work environment where staff are able to collaborate and support each other, while also being supported by their institutions. The committee found that the culture is often egalitarian, allowing all staff, both senior and junior, to engage with each other and ensuring a good circulation of ideas. The continuing internationalisation of the staff makes a particularly positive contribution to the fostering of an inclusive and open working culture, which in turn raises research quality and increases the attractiveness of the institution to potential applicants at all levels. All of the participating schools have indicated that they uphold the principles that are expressed in research integrity codes of conduct at various levels. They have also demonstrated that they are in compliance with institutional and national frameworks, and most offer seminars and workshops to disseminate information on this topic to members of staff, from PhD candidates in their course training to senior faculty members. In particular, the committee was pleased to see

the development of online tools such as apps available to researchers to continuously check and monitor their own work.

Finally, the committee would like to point out that there is room for improvement in terms of collaboration between the schools. The Netherlands is a small country geographically, and since most schools face similar challenges, they could benefit from working together in many areas, offering seminars and workshops, combining course training for PhD candidates etc. The Tinbergen Institute already provides an example of the latter.

PhD policy and training

The committee appreciates that PhD candidates occupy a prominent position within the Dutch academic system, being salaried employees with access to the same benefits as other staff. This is also why the committee has chosen to consistently refer to these junior staff members as 'PhD candidates', and not as 'PhD students'.

The committee noted that the self-evaluation reports do not seem to do full justice to PhD candidates being an integral part of the academic staff. Information on the PhD programme is confined to a separate section in the report and there is a lack of showcasing how PhD candidates are indeed part of the academic and research structure. The reports do not sufficiently address how PhD candidates are part of the vision, mission, and overall strategy of the school and/or university. While collegiality and support between staff was promoted, it at times seemed as if PhD candidates were discussed as a separate group within the school structure, as was most seen when the committee heard differing opinions on the value, operation, and efficiency of the PhD councils.

Regarding the selection and admission procedures, the committee found that, despite differences in application processes across and within schools, the admission processes are well-structured, comprehensive, and thorough in their selection of top candidates.

Clear admission processes are established for PhD candidates from multiple tracks. The committee finds in general that the admission processes are sufficient in preparing prospective candidates for a PhD trajectory and allowing schools to integrate PhD candidates into the existing academic structure. Schools thoroughly consider possible changes made in its research master tracks and cooperation with other institutes, such as the Tinbergen Institute

The committee noted that many schools recorded a high number of PhD candidates dropping out, due in part to other job offers, and difficulty keeping up with the challenges that a PhD project may pose. This may necessitate a more comprehensive system, where the motivations for early termination are recorded, leading to prevention of unnecessary future dropouts. Notably, a considerable number of PhDs do not complete their thesis in time. While extensions or additional teaching positions are a way to assist them, the statistics suggest to the committee that there may be core issues at play which candidates experience as detrimental to their success.

All schools provided clear overviews of the quality assurance systems in place to ensure the successful completion of the PhD trajectory. The committee was pleased with the presence of PhD councils or committees and the active roles these bodies play in important decision-making processes that affect candidates on both a personal and professional level. The inclusion of select PhD candidates in other management bodies, such as the faculty board, is also a good practice. The committee hopes that such inclusion and cooperation with PhD bodies will be continued in the future. PhD candidates could be embraced as active change agents in the structuring and formulation of the PhD programme, underscoring the important and active role that they play in the research landscape of each school.

With respect to supervision, the committee notes that a number of interviewed PhD

candidates expressed a strong wish for a more balanced monitoring system that goes beyond the formal annual evaluations, where informal meetings take place more regularly. It became clear that supervisors or promoters are often the first point of contact for academic and personal issues. While satisfaction with their commitment to their PhD candidates is overall high, there is a call for supervisors to be trained on how to be an effective supervisor, which has been heeded by some schools.

The committee found that PhD candidates were overall satisfied with the training, monitoring, support, and coaching they received at their schools. But, given the high rates of mental health concerns and burnouts amongst PhD candidates in the Netherlands, the committee finds it important to raise few key issues. First, some PhD candidates were not aware of the mental health services available to them, despite the clear availability of psychologists, PhD directors, an ombudsman, and other structures. In terms of the provision of such information, improvements can be made. Secondly, the committee noted that, because confidential counsellors were often senior members of staff, interviewed PhD candidates felt uncomfortable raising certain problems and/or issues with them. Some suggested that an external individual, often seen as more impartial, could better serve as such an advisor for discussing confidential matters. This is a proposal that the committee supports.

With regards to PhD training, the committee found significant differences between and even within schools. Acknowledging that PhD candidates – internal, external, part time, with or without prior research master training – require different training to adapt to their needs, the committee noticed a distinct difference in the level of structure of mandatory and voluntary courses offered by each school, as well as the PhD programme at large. It is of some concern that some PhD programmes offered no concrete course structure, with a voluntary course choice policy. The committee considers it important for PhD candidates to master fundamental academic and research methodology skills; hence, a more comprehensive and formal PhD programme is the preferable option. The committee observed that many programmes are adjusting their course programmes to become more flexible, attract more students, and provide more time for research. In particular, the move from a two-year research master and three-year PhD programme to a four- or five-year PhD programme was interesting. In some cases the committee noticed that content-wise the programmes remained unchanged, with the same research master courses now being taught as part of the PhD training. This means that no compromises are made on the quality of the programme. Teaching time for PhD candidates is generally capped at 20%. The committee observed that the nominal and real-life hours do not vary much, which it sees as positive.

On the topic of job market preparation, the committee witnessed major differences across schools. Some schools offer comprehensive preparation starting from year one of the PhD trajectory, including talks with placement officers and supervisors. Others started offering job market preparation in the third year, while very rarely no job market training was offered. The committee is satisfied with the planning of career events, workshops, and seminars with alumni, stakeholders, and industry, as well as the availability of funding for PhD candidates to travel to job markets both locally and abroad all organised by career offices, PhD directors, and similar bodies. The committee also recognises that supervisors are often the first step in preparing PhD candidates for the job market, as they possess the skills, knowledge, and network connections for candidates to possibly make use of. This close collaboration and support system is encouraged. Some PhD candidates did, however, voice concern that much of the attention was devoted to academic careers after graduation, and they would like to access more non-academic job market events, which is a reasonable request.

COVID-19

To conclude, the committee wishes to share a few observations regarding the effects that COVID-19 has had on the schools. Visiting the schools in the middle of the global pandemic, the committee made it a priority to discuss recent experiences of staff with respect to the consequences of COVID-19. The committee concludes that the virus has had a profound impact on the workload, and sometimes on the personal and professional wellbeing of staff. The available research time was affected by the increased preparation time for online teaching, while staff also had to deal with delays because of the postponement of research activities, for example, lab experiments.

As far as the committee was able to observe, most schools made welcome arrangements to mitigate these effects, in the form of an extension of the tenure/promotion period or the evaluation window. In particular, the committee was pleased that schools offered PhD candidates the option of contract extensions on their research. Such extensions were either granted across the board to all candidates, or dealt with on an individual basis, depending on the factors that affected a particular project or candidate. Acknowledging the differences in procedure across schools, the committee found that many PhD candidates desired a clearer channel of communication regarding this process, with some candidates expressing uncertainty about the future of their trajectory, due to often confusing and vague guidelines, which could lead to an increase in work pressure and stress.

The committee notes that, even as the COVID-19 situation seemed to be improving at the time of writing, some of the adverse effects may last longer. Such arrangements might therefore need to continue for some time in the future.

Appendices

1. CVs of committee members

Geert Dhaene (chair) is Professor of Econometrics at the Department of Economics of KU Leuven, Belgium. He also taught at other universities in Belgium, the US, and China. His main research interest is panel data econometrics. His work appeared in Econometrica, Games and Economic Behaviour, The Review of Economic Studies, and Journal of Econometrics.

Patricio Dalton is an Associate Professor of Economics at the Economics Department of Tilburg University, the Netherlands. Dalton studied Economics at Universidad Argentina de la Empresa (UADE), Argentina, and received his PhD from the University of Warwick, UK, in 2009. Dalton is director of the ENTER Exchange Network and a member of the Editorial Advisory Board of the *National Institute Economic Review*. His research is situated at the intersection of poverty, psychology and decision-making, using both formal models and experiments in the laboratory and the field. Funded by a DFID Grant, he has designed and conducted Randomised Control Trials (RCTs) to understand the constraints of small-firm growth in developing countries (Kenya, Ghana). Funded by an ESRC-DFID grant, he is currently working on an RCT in India to empower parents to make their children's school more accountable.

Pieter Hasekamp is director of CPB Netherlands Bureau for Economic Policy Analysis, the Netherlands. He studied Economics at the Erasmus University Rotterdam and obtained his PhD at the European University Institute in Florence. Before joining CPB in 2020, Hasekamp held various management positions at the Ministry of Health, Welfare and Sport and the Ministry of Finance. From 2015, he was Director-General for Tax Affairs at the Ministry of Finance. Prior to that, he was general director at Zorgverzekeraars Nederland (ZN) and director of health insurance at the Ministry of Health, Welfare and Sport.

Linda Hendry is Professor of Operations Management and Head of the Department of Management Science at Lancaster University Management School in the UK. Hendry's main ongoing research interest is in Sustainable Supply Chain Management, including the reduction of plastic packaging in the food supply chain; the resilience of local to global food supply chains in terms of environmental, social and economic sustainability; the impact of Modern Slavery Legislation; the influence of NGOs; and the role of horizontal supply chain collaboration. She currently works on an UKRI Industrial Strategy funded project (Plastic Packaging in People's Lives – aiming to reduce plastic packaging in the food supply chain by bridging the consumer attitude-behaviour gap). Hendry's other research interests include workload control systems for make-to-order manufacturing companies and the application of Six Sigma continuous improvement programmes in manufacturing and service industries.

Sophie Manigart is professor of Corporate Finance and Faculty Dean at Vlerick Business School and professor at Ghent University, Belgium. Manigart holds a Civil Engineering degree, an MBA and a PhD in Management from Ghent University. Her research focuses on the financing strategies of entrepreneurial companies, including venture capital, private equity and business angel finance. She has developed her research through stays at Wharton School of Business (Philadelphia) and IE Business School (Madrid) and published two books and over forty articles and book chapters. She is associate editor of the leading journal *Entrepreneurship Theory and Practice*. Manigart has advised numerous start-ups. Experiencing a gap in the financing of start-ups, she was one of the founders of the first Belgian business angel network, BAN Vlaanderen.

Constantine (Costas) Katsikeas is Arnold Ziff Research Chair and Professor of Marketing

and International Management at the University of Leeds in the UK. Also, he is the Founder and Director of the Global and Strategic Marketing Research Center at Leeds University Business School. Katsikeas holds an MA from Lancaster University and a PhD from Cardiff University. His main interests are global marketing and exporting, sales management, cross-border relationships, strategic alliances, and competitive strategy. He has published widely on these topics and is the recipient of the American Marketing Association's 2013 and 2015 Excellence in Global Marketing Award for outstanding research. Katsikeas is Editor–International Marketing of the Journal of Intrnational Business Studies and the Immediate-Past Editor-in-Chief of the Journal of International Marketing, and serves as editorial board member of a number of other academic journals. He is also an active member of the American Marketing Association, Academy of International Business, Academy of Marketing Science, and European Marketing Academy.

Anell Roos is a PhD candidate in Methods at Radboud University Nijmegen, the Netherlands. She holds a BA in Anthropology and Psychology, and a BSocSci (Honns) in Anthropology from the University of Pretoria in South Africa, an MA in women's and gender studies from Utrecht University, and an MSc in Cultural and Social Anthropology from the University of Amsterdam. At Radboud University, she taught Academic Skills for Business Administration. Her research pertains to the effect of change agent reflexivity and positionality on the design and implementation of gender equality plans in higher education. Together with colleagues, she is part of the evaluation and assessment team in GEARING-Roles, a project funded by the European Union's Horizon 2020 Research and Innovation programme.

Elizabeth Rose is Research Chair Professor of Business Policy and Strategy at the Indian Institute of Management Udaipur (India). Her previous academic appointments have been in New Zealand, Finland, the UK, and the US. Rose's work has appeared in a variety of top-tier journals, including the Journal of International Business Studies, Strategic Management Journal, and Journal of World Business. She is an elected Fellow of the Academy of International Business (AIB). Rose has held leadership roles in several academic professional organisations, including the AIB, Academy of Management, Strategic Management Society, Australia and New Zealand International Business Academy, and the Association of Japanese Business Studies. She is currently vice president of the Board of the European Institute for Advanced Studies in Management (EIASM) and advisory board member for the School of Management and Entrepreneurship of the Indian Institute of Technology Jodhpur. Rose is co-editor of the newly launched journal Academy of Management Collections.

Hylke Vandenbussche is professor and head of the international economics section at the University of Leuven in Belgium. She started her academic career as a lecturer at the University of Cambridge in the UK, followed by a professorship at the university of Louvain-la-neuve, affiliated to the center CORE. Vandenbussche has been a visiting professor at Dartmouth College and is a regular visitor to Penn State in the US. She is also a research fellow of CEPR, London. Her research deals with firm-level trade and the role of demand, firm-size distributions, input-output linkages, global value chains and the interaction with trade policy. Vandenbussche serves on the scientific committee of the US Midwest Trade conference and the European Trade study group (ETSG), and is also a member of the American Economic Association and the European Economic Association.

Marleen Willekens is professor of Accounting and Auditing at the Faculty of Economics and Business at KU Leuven, Belgium. She also holds a part-time research professorship at BI Norwegian Business School. Furthermore, she is currently the research coordinator of the Humanities and Social Sciences Group at KU Leuven, and has been involved in various internal service functions at KU Leuven

throughout her career. Willekens holds an MA in Business Economics from Ghent University (1987) and obtained a PhD in in Industrial and Business Studies at the University of Warwick (Warwick Business School, 1991-1995). Throughout her academic career, Willekens taught at various schools and universities across Europe, including Tilburg University in the Netherlands (2006-2008). Her research interests include the quality and pricing of external auditing, the industrial organization of the audit market, auditor regulation and liability, effects of auditing on corporate tax avoidance, and the economic valuation of intangible assets such as intellectual property. Willekens is a founding member of the European Audit Research Network (EARNet) and a member of the European Accounting Association and the American Accounting Association.

2. Schedule of the digital site visit

13 September: University of Amsterdam

start	*end*	*meeting*
09:00	09:45	Preparatory committee meeting
09:45	10:30	Interview with management
10:30	10:40	short break/discussion
10:40	11:10	Interview with Graduate School
11:10	11:40	Interview with PhD students ABS-RI (Business School)
11:40	11:50	discussion
11:50	12:00	break
12:00	12:40	Interview with research staff ABS-RI (Business School)
12:40	13:10	Interview with stakeholders
13:10	13:55	discussion
13:20	13:55	lunch
13:55	14:25	Interview with PhD students ASE-RI (School of Economics)
14:25	14:35	discussion
14:35	14:45	break
14:45	15:25	Interview with research staff ASE-RI (School of Economics)
15:25	16:25	discussion and evaluation
16:30		end of day

14 September: Utrecht University

start	*end*	*meeting*
09:00	09:30	preparation
09:30	10:10	Interview with department management team
10:10	10:20	short break/discussion
10:20	10:50	Interview with senior research staff
10:50	11:20	Interview with junior research staff
11:20	11:30	discussion
11:30	11:35	break
11:35	12:15	Interview with PhD students
12:15	12:45	Interview with management research unit/ graduate school/ research school
12:45	13:00	discussion
13:00	13:45	lunch
13:45	14:30	Interview with social partners
14:30	15:30	evaluation
15:30		end of day

15 September: Maastricht University

start	*end*	*meeting*
09:00	09:30	preparation
09:30	10:15	Interview with SBE Faculty Board
10:15	10:25	short break/discussion
10:25	11:10	Interview with department heads and spearhead leaders
11:10	11:20	discussion
11:20	11:30	break
11:30	12:15	Interview with research staff
12:15	12:45	interview with PhD students
12:45	13:00	discussion
13:00	13:45	lunch
13:45	14:30	interview with management Graduate School GSBE
14:30	15:30	evaluation
15:30		end of day

16 September: Erasmus University Rotterdam

start	*end*	*meeting*
09:00	09:30	preparation
09:30	10:15	Interview with RSM management
10:15	10:25	short break/discussion
10:25	11:10	Interview with research staff
11:10	11:20	discussion
11:20	11:30	break
11:30	12:15	Interview with PhD candidates/programmes
12:15	12:45	Interview with Graduate school
12:45	13:00	discussion
13:00	13:45	lunch
13:45	14:30	Interview on Impact and Engagement
14:30	15:30	evaluation
15:30		end of day

22 September Open Universiteit

start	*end*	*meeting*
09:00	09:30	preparation
09:30	10:15	Interview with Faculty and University management
10:15	10:25	short break/discussion
10:25	11:10	Interview with department chairs and senior researchers
11:10	11:20	discussion
11:20	11:25	break
11:25	12:10	Interview with Researchers
12:10	12:55	Interview with PhD candidates
12:55	13:15	discussion
13:15	14:00	lunch
14:00	14:30	Interview Stakeholders
14:30	15:30	evaluation
15:30		end of day

24 September VU University

start	*end*	*meeting*
09:00	09:45	Preparation
09:45	10:30	Interview with management
10:30	10:40	short break/discussion
10:40	11:10	Interview with Graduate School
11:10	11:40	Interview with PhD students ABRI (Business School)
11:40	11:50	discussion
11:50	12:00	break
12:00	12:40	Interview with research staff ABRI (Business School)
12:40	13:10	Interview with stakeholders
13:10	13:55	discussion
13:20	13:55	lunch
13:55	14:25	Interview with PhD students Tinbergen Institute (Economics)
14:25	14:35	discussion
14:35	14:45	break
14:45	15:25	Interview with research staff Tinbergen Institute (Economics)
15:25	16:25	discussion and evaluation
16:30		end of day

27 September Feedback session

	start time	**end time**
General feedback	09:00	09:30
feedback VU	09:30	09:50
break	09:50	10:00
feedback OU	10:00	10:20
feedback UvA	10:20	11:40
break	10:40	10:50
feedback EUR	10:50	11:10
feedback RUG	11:10	11:30
break	11:30	11:40
feedback MU	11:40	12:00
feedback UU	12:00	12:20
End of day	12:20	

3. Quantitative information

Erasmus School of Management

Research staff	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	#	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***
Full professors	36	29,4	36	31,2	34	27,9	37	30	54	45,8	55	47,5
Associate professors	54	50,9	52	48,2	57	51,7	61	55,3	66	58,8	58	52,6
Assistant professors	86	81,2	86	83	92	88,3	89	85,4	89	85,6	87	83,6
Post-docs	30	26,3	25	20,4	34	25,8	41	30,4	41	30,4	39	28
PhD students	112	111	108	104	109	103	109	106	105	102	106	104
total	**319**	**299**	**308**	**287**	**326**	**297**	**337**	**307**	**355**	**323**	**345**	**316**

Funding	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	%	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***
Direct funding	85	203,6	85	211,5	84	215,6	87	239,4	89	247	90	256,5
Research Grants	7	17,4	7	17,1	6	16,1	5	13	3	9,3	4	11,5
Contract Research	8	17,7	8	20	10	25,7	9	24	8	21,3	6	17,9
Other												
total	**100**	**238,7**	**100**	**248,6**	**100**	**257,4**	**100**	**276,3**	**100**	**277,6**	**100**	**285,7**

Output	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***
Refereed articles (AIP)	162	143	165	168	193	198
Books (English)	5	3	5	8	5	5
Book chapters (English)	26	19	35	31	28	23
PhD theses	21	22	15	14	23	17

total	**214**	**187**	**220**	**221**	**249**	**243**

Maastricht University

Research staff	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	#	***FTE***	***#***	***FTE***	***#***	***FTE***	***#***	***FTE***	***#***	***FTE***	***#***	***FTE***
Full profesors	50	14,2	48	13,5	56	15,8	56	16,8	65	19,6	70	21,8
Associate professors	43	15,1	48	17	44	15,6	45	16,2	46	15,6	42	14,5
Assistant professors	50	18,9	52	19,7	54	20,8	52	20,1	67	25,8	741	28
Postdocs/researchers	24	20,7	20	18,3	18	10,1	16	13,3	20	17,5	19	16,5
PhD students	127		113		115		102		96		107	
Honorary/visiting professors	21	0,5	25	0,6	26	0,5	28	0,4	29	0,4	30	0,3
total	**315**	**69,4**	**306**	**39,1**	**313**	**62,8**	**299**	**66,7**	**29**	**78,8**	**342**	**81**

Funding	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	%	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***
Direct funding	52	135,4	51,7	133,3	52,1	136,8	53,1	133,5	52,8	137,1	52,1	145,2
Research Grants	8,9	23,2	9,7	25	6,8	17,7	6,9	17,3	7,2	18,7	6,6	18,4
Contract Research	39,1	101,8	38,6	99,7	41,2	108,1	40	100,6	40,1	104,2	41,3	115,1
Other												
total	**100**	**260,3**	**100**	**258**	**100**	**262,6**	**100**	**251,4**	**100**	**260**	**100**	**278,6**

Output	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***
Refereed articles (AIP)	237	245	218	220	261	311
Books (English)	1	1	1	1	0	1
Book chapters (English)	15	17	18	14	17	15
PhD theses	42	30	28	31	37	20
total	**295**	**293**	**265**	**266**	**315**	**347**

Open University

Research staff	***2015 (MST)***		***2016 (MST)***		***2017 (MST)***		***2018 (MST)***		***2019 (MST)***		***2020 (MW)***	
	#	***FTE***	***#***	***FTE***	***#***	***FTE***	***#***	***FTE***	***#***	***FTE***	***#***	***FTE***
Scientific staff		15		17,5		19,1		21,6		23,1		11,3
Postdocs/researchers		1,8		1,3		2,1		4,9		3,7		0,3
PhD students		5		2,8		3,1		4,8		8		6,3
Honorary/visiting professors		1,2		0,7		0,8		0,7		1,1		0,6
total		**21,8**		**21,6**		**24,2**		**31,3**		**34,7**		**17,8**

Funding	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	%	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***
Direct funding	89	19,4	84	18,2	73	17,7	49	15,4	49	17	57	10,2
Research Grants	2	0,5	4	0,9	5	1,2	5	1,6	5	1,8	4	0,8
Contract Research	9	1,9	12	2,6	22	5,3	46	14,3	46	16	38	6,8
Other												
total	**100**	**21,8**	**100**	**21,6**	**100**	**24,2**	**100**	**31,3**	**100**	**34,7**	**100**	**17,8**

Output	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***
Refereed articles (AIP)	77	68	103	110	116	103
Books (English)	0	2	2	5	2	3
Book chapters (English)	21	12	19	8	16	13
PhD theses	13	7	6	3	5	11
total	**111**	**89**	**130**	**126**	**139**	**130**

University of Amsterdam Economics (ASE-RI)

Research staff	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	#	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***
Scientific staff	60	22,1	61	23,5	67	23,3	66	28,1	68	27	74	29
Postdocs/researchers	9	4,8	15	7	13	8,5	10	6,2	10	5,1	9	4
PhD students	48		41		38		39		39		48	
Honorary professors and scientific staff <0,2 fte	3	0,3	4	0,3	2	0,3	1	0,1	1	0,05	1	0,05
total	**120**	**55**	**124**	**53,1**	**120**	**50,2**	**116**	**51**	**118**	**52,5**	**146**	**56,6**

Funding	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	%	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***
Direct funding	68	37,1	74	39,3	71	35,5	74	37,5	71	37,4	71	40,2
Research Grants	18	10	15	8,1	23	11,8	20	10	21	11,1	22	12,7
Contract Research	14	7,9	11	5,7	6	2,9	7	3,5	7	3,9	6	3,6
Other												
total	**100**	**55**	**100**	**53,1**	**100**	**50,2**	**100**	**51**	**100**	**52,4**	**100**	**56,6**

Output	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***
Refereed articles (AIP)	94	111	112	77	88	76
Books	1	0	1	0	0	0
PhD theses	6	3	2	5	6	6
PhD theses	16	11	16	18	8	4
total	**117**	**125**	**131**	**100**	**102**	**79**

University of Amsterdam Business (ABS-RI)

Research staff	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	#	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***
Scientific staff		30		34		34,4		39,5		50,2		52,3
Postdocs/researchers		3,9		1,7		1,6		3		3		3,7
PhD students		15,6		12,9		15,5		17,3		27,3		31,3
total		**49,55**		**48,7**		**51,5**		**59,7**		**80,5**		**87,3**

Funding	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	%	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***
Direct funding	85,2	42,2	88,8	43,2	8,5	416,1	93,3	55,7	93,5	75,3	92,4	80,7
Research Grants	1,8	0,9	2,3	1,1	2,7	1,4	1,3	0,8	2,7	2,2	2,8	2,4
Contract Research	13	6,4	8,9	4,4	7,8	4	5,4	3,2	3,7	3	4,8	4,2
Other												
total	**100**	**49,5**	**100**	**48,6**	**100**	**51,5**	**100**	**59,7**	**100**	**80,5**	**100**	**87,3**

Output	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***
Refereed articles (AIP)	79	100	110	101	77	85
Books (English)	0	1	4	3	4	1
Book chapters (English)	17	23	8	10	15	10
PhD theses	4	9	9	7	10	5
total	**100**	**133**	**131**	**121**	**106**	**101**

University of Groningen

Research staff	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	#	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***
Full profesors	50	22,1	54	24,5	55	24,4	59	24,8	59	25	62	25,8
Associate professors	56	23,6	52	22,2	51	20,8	51	21,8	57	22,9	54	22,2
Assistant professors	66	27,2	76	29,3	86	329	94	37,3	99	39,1	96	39,7
Postdocs/researchers	14	7,6	14	8,6	15	7,9	17	11,1	18	8,5	17	9,6
PhD students	150		142		142		143		162		166	
Honorary/visiting professors	10		11		10		11		10		9	
total	**346**	**80,5**	**349**	**84,6**	**359**	**86**	**375**	**95**	**405**	**95,5**	**404**	**97,3**

Funding	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	%	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***
Direct funding	66,4	100,2	68,3	108,2	68,9	111,7	66,6	1125,6	68,9	114,6	70,2	117,6
Research Grants	18,8	25,3	21,3	33,8	23,6	38,3	24,2	41	20	33,2	17,3	29
Contract Research	15,1	22,7	9,8	15,5	6,2	10	7,2	12,2	9,8	16,3	10,9	18,3
Other	1,8	2,7	0,7	1	1,4	2,2	1,9	3,3	1,3	2,1	1,5	2,5
total	**100**	**151**	**100**	**158,5**	**100**	**162,2**	**100**	**169,1**	**100**	**166,2**	**100**	**167,4**

Output	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***
Refereed articles (AIP)	176	195	205	198	205	227
Books (English)	9	3	5	3	4	8
Book chapters (English)	44	27	58	35	39	14
PhD theses	29	23	25	22	30	26
total	**258**	**248**	**293**	**258**	**278**	**273**

Utrecht University

Research staff	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	#	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***
Full profesors	14.8	3.9	19.7	5.6	17.4	5.8	17.7	7.5	17.7	7.4	17.8	7.0
Associate professors	7.3	3.4	9.0	4.5	8.0	4.1	8.2	3.9	8.7	4.0	8.0	3.5
Assistant professors	24.7	8.6	27.2	8.8	35.4	11.8	38.0	12.1	35.0	12.9	29.7	11.8
Postdocs/researchers	4.5	2.9	5.7	4.1	11.6	7.1	8.2	5.1	6.7	4.5	10.3	6.3
PhD candidates	23.4		21.3		20.6		16.9		13.7		16.9	
Honorary/visiting professors												
total	**74.7**	**42.4**	**82.9**	**44.3**	**92.9**	**49.4**	**88.9**	**45.5**	**81.8**	**42.5**	**82.7**	**45.5**

Funding	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	%	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***	***%***	***FTE***
Direct funding	59.0	22.4	63.4	25.7	58.7	26.6	62.3	26.1	71.6	27.6	71.0	29.2
Research Grants	2.6	1.0	5.1	2.1	6.4	2.9	8.3	3.5	7.1	2.8	7.6	3.1
Contract Research	38.4	14.6	31.5	12.8	34.9	15.8	29.3	12.3	22.3	8.7	21.4	8.8
Other												
total		**38.0**		**40.6**		**45.3**		**41.8**		**39.0**		**41.1**

Output	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***
Refereed articles (AIP)	49	66	62	70	69	69
Books (English)	3	1	2	1	4	2
Book chapters (English)	16	10	9	18	24	11
PhD theses	5	4	6	4	10	3
total	**73**	**81**	**79**	**93**	**105**	**85**

Vrije Universiteit Amsterdam **Economics**

Research staff	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	#	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***
Scientific staff	85	33,9	83	33	88	32,8	86	30,8	92	32,2	85	31,8
Postdocs/researchers	13	6,6	20	12	25	15,8	30	17,6	29	17,4	18	11,3
PhD students	55		49		43		40		45		43	
Total	**153**	**40,5**	**152**	**45**	**156**	**48,6**	**156**	**48,4**	**166**	**49,6**	**146**	**43,1**

Funding	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	%	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***
Direct funding	56	40,6	56	39,8	53	38	51	37,2	48	34,9	50	34,9
Research Grants	22	16,3	20	14,4	25	17,9	22	16	27	19,2	25	17,2
Contract Research	22	16,1	24	17,5	22	15,9	26	19,1	25	18,2	25	17,6
Other												
total	**100**	**72,9**	**100**	**71,7**	**100**	**71,8**	**100**	**72,2**	**100**	**72,3**	**100**	**69,7**

Output	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***
Refereed articles (AIP)	233	224	204	178	223	185
Books (English)	9	2	0	2	2	0
Book chapters (English)	27	22	18	18	5	8
PhD theses	19	23	16	15	17	11
total	**288**	**271**	**238**	**213**	**247**	**204**

Vrije Universiteit Amsterdam **Business**

Research staff	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	#	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***	**#**	***FTE***
Scientific staff	84	28,4	78	28	96	31,8	100	32,8	100	33,6	102	37,3
Postdocs/researchers	5	1,9	7	2,5	6	2	6	3,5	13	6,4	10	6
PhD students	36		37		47		52		51		45	
total	**125**	**30,2**	**122**	**30,5**	**149**	**33,9**	**158**	**36,2**	**164**	**40,1**	**157**	**43,3**

Funding	***2015***		***2016***		***2017***		***2018***		***2019***		***2020***	
	%	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***	**%**	***FTE***
Direct funding	80	39,7	76	40,3	72	45	70	45,9	70	47,4	70	50,4
Research Grants	9	4,5	8	4,5	13	8	11	7,3	6	3,8	6	4,8
Contract Research	11	5,5	16	8	15	9,2	19	12,1	24	16,2	24	17,3
Other												
total	**100**	**49,7**	**100**	**52,8**	**100**	**62,1**	**100**	**65,2**	**100**	**67,5**	**100**	**72,4**

Output	***2015***	***2016***	***2017***	***2018***	***2019***	***2020***
Refereed articles (AIP)	154	147	122	148	143	202
Books (English)	6	2	6	3	3	2
Book chapters (English)	36	23	13	15	29	9
PhD theses	8	10	8	13	17	8
total	**204**	**182**	**149**	**179**	**192**	**221**