

Erasmus
School of
Economics

Erasmus School of Economics **Self-Assessment**

2008 - 2014

Erasmus School Of Economics
Established 1913

Part of Erasmus University Rotterdam
Co-Founder of Tinbergen Institute and Erasmus Research Institute of Management (ERIM)

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Introduction

“Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us that when the storm is long past the ocean is flat again.”

John Maynard
Keynes (1923)

All academic research in the Netherlands is periodically assessed based on a Standard Evaluation Protocol (SEP). Roughly every six years an international peer review committee (IPRC) assesses all schools in the country in a particular domain and draws conclusions about the quality, impact and viability of their research. For economics and business such an IPRC assessment will occur again in September 2015. Initial input for the IPRC’s assessment is a so-called ‘self-assessment’, containing a school’s own analysis of its performance in the past years. This report contains the self-assessment of Erasmus School of Economics, for its research in the years 2008 - 2014.

Those years clearly qualified as “tempestuous seasons” around the world. What started as “the winter of our discontent” turned into “seven years of famine” for very many. However, developments at Erasmus School of Economics differed from those in the world at large: they were less spectacular, but also clearly more positive.

We are therefore proud to share our perspective on those developments with you. Bearing in mind Lord Keynes’ warning we hope that you will agree with us that what we have done in 2008 - 2014 was far from “useless” and definitely not “too easy”. We hope the report will be informative and inspiring to the IPRC and others and we look forward to their feedback during the coming months.

1. Organisation

1.1. Mission

Erasmus School of Economics (ESE), founded in 1913, is the oldest institute for academic education and research in economics in the Netherlands. Its ambition is reflected in the school's mission:

"Erasmus School of Economics is the natural choice for ambitious people who wish to study economics, for academics eager to contribute to relevant and challenging research, for alumni eager to learn and share their experience, and for governments and firms seeking reliable advice".

1.2. Structure

Research at Erasmus School of Economics covers topics in economics and business. The faculty is organised into four departments: Applied Economics, Business Economics, Econometrics and Economics. Their research is organised into five programmes, headed by research programme leaders. The scope of the research programmes is strongly aligned with the focus of the departments. In fact, the scope of three research programmes - Applied Economics, Econometrics and Economics - is identical to the one of their corresponding department. Only Business Economics, the largest department, has two programmes: Marketing and Finance & Accounting. Hence, the set of research programmes is as follows:

- Applied Economics;
- Econometrics & Management Science;
- Economics;
- Finance & Accounting;
- Marketing.

1.3. Leadership and culture

Heads of departments and research programme leaders¹ meet frequently with the dean to discuss affairs in the departments, especially in connection to the school's overall research priorities. While the dean holds ultimate responsibility for the school's supervision, the research programmes play an instrumental role in the implementation of the school's research strategy. They do this by adding diversity to the implementation of the school-wide priorities, within a context of overall unity, shared understanding and consistency.

The school benefits from the combination of a shared focus on strategic priorities and sufficient room for the individual research programmes to manoeuvre in accordance with their specific requirements. The previous IPRC (2008) already noticed this and confirmed the power of the unity of vision: *"The committee was in particular impressed by the fact that the goals and mission of the school are widely shared amongst all the staff members we met. They appear not only to share the mission and expressed goals, but also are strongly committed towards them".*

Later, the mid-term committee (2013) also appreciated the structure and culture of Erasmus School of Economics' governance, in particular for keeping a good balance between reinforcing a common purpose and preserving flexibility: *"At Erasmus School of Economics, within the context of a widely shared commitment to bring on board and keep 'good people' in the broad sense, research programmes and the individuals in them keep ample room to take initiative, develop in directions that they consider promising, and excel. This is a sensible approach befitting an academic environment and is clearly appreciated by the employees".*

¹ In most cases these are the same people, thus enhancing the efficient governance of the research programmes.

2. Strategy in 2008 - 2014

2.1. Impact within academia

At Erasmus School of Economics dedication to scientific excellence is key. For instance, this is reflected in Erasmus School of Economics' rules for promotion and tenure and in the membership criteria for its research institutes: Tinbergen Institute (TI) and Erasmus Research Institute of Management (ERIM).

Erasmus School of Economics' strategic priorities most clearly related to scientific excellence were:

- producing refereed articles, especially in top journals in economics;
- obtaining research grants with significant academic prestige;
- completing high-quality dissertations, to prepare for a successful academic career.

Within the context of each one of these priorities, quality is more important than quantity. For instance, regarding refereed articles the school aims to increase the number of publications in the top journals, even if this will lead to a lower number of publications overall. This is supported by the membership and promotion/tenure criteria. These criteria were adjusted during the reporting period, to put a stronger emphasis on quality over quantity. In particular, current membership and promotion decisions are not primarily based on someone's total set of papers, but on the quality of that person's best papers.

Likewise, in the case of grants, the school has pursued especially the ones that provide clear academic prestige. Examples are the grants currently labelled under 'Excellent Science' in the EU's H2020 programme and those in the 'Innovative Research' (in Dutch: Vernieuwingsimpuls) programme of the Netherlands Organisation for Scientific Research (NWO). Details about these activities will be provided in the sections on Results.

Doctoral trajectories are not strictly managed based on lead time as a goal in itself. Instead, sufficient attention (and time) is given to completing dissertations that are good enough to obtain a competitive position on the (international) academic labour market. More details will be provided in the section on Doctoral Education.

2.2. Impact outside academia

The three priorities mentioned above are primarily aimed at the academic community. In addition, the school has also started more initiatives aimed at society at large. As will be explained in more detail in the section on Societal Relevance, during the past years Erasmus School of Economics has in particular emphasised the valorisation of its research through:

- more collaboration with non-academic partners;
- more participation of its faculty in boards, committees and advisory councils;
- more media appearances to inform public opinion;
- more knowledge transfer via the companies in EUR Holding.

Furthermore, Erasmus School of Economics considers its education activities as a key element of its strategy to create societal impact. Several hundreds of students graduate from Erasmus School of Economics every year, and many subsequently move into positions of substantial responsibility. Their years in Erasmus School of Economics classrooms provide an opportunity to win their hearts and minds for critical thinking based on advanced knowledge in economics, and for using it to make the world a better place. After all, the manifestation of the wind of thought is not knowledge per se, but the ability to tell right from wrong and to act accordingly.

2.3. Guiding principles

During the reporting period a few common principles have been used to drive the development towards more impact in academia and society at large, as they were introduced above. These principles are for instance reflected in hiring and promotion decisions. These principles do not only guide the decisions of faculty, but are also solidly embedded in clear procedures of HR and Finance. The main principles are:

- Faculty must perform well in research and education.
- Growth in faculty will primarily occur at the junior level, by hiring young talent.
- Development towards excellence requires building of strong coherent groups; individual qualities will be leveraged through coherent teams.

In different ways these principles will reappear in the information provided in the next chapters. Targets for research are part of a multi-year 'covenant' between Erasmus School of Economics and Erasmus University's Executive Board. As part of this agreement progress regarding academic and societal impact and effectiveness of Erasmus School of Economics' choices is assessed on an annual basis.

3. Composition

Despite the past years of austerity, Erasmus School of Economics has been able to grow, especially at the vital level of junior researchers. Table 1 shows the level of input (in fte) for research at Erasmus School of Economics during the years 2008 - 2014. In this table research effort for tenured and non-tenured faculty is calculated as 40% of the appointment at Erasmus School of Economics, as the other part of their working time is devoted to teaching. For PhD students the research effort is 80% of their appointment. Overall growth in the academic workforce has primarily been caused by Erasmus School of Economics' ability to recruit a significant number of young talented researchers at the beginning of their academic career, increasingly on the international job market. This development has been leveraged by the university-wide introduction, in 2009, of a 'tenure track' approach: young faculty can expect tenure after approximately five years when they meet ambitious targets regarding research, education and grants. As a result of this approach, non-tenured research staff increased by 95% during the reporting period. Meanwhile tenured faculty increased much more modestly, with 39% (to a large extent through tenure trackers who actually received tenure). Between 2008 and 2013 the research effort by PhD students increased by 39%. However, it decreased again in 2014 when many doctoral students defended their thesis (see also 'PhD theses' in Table 3) and at the same time relatively few new doctoral students were hired, to preserve a balanced budget. Hence, the growth in research effort by PhD students is only 7% overall.

Table 1: **Available research effort per year (in fte)**

ESE	2008	2009	2010	2011	2012	2013	2014
Full prof.	8.4	8.5	8	7.9	9.4	9.5	9.5
Associate prof.	4.5	4.6	5.4	5.4	6.1	7.6	8.4
Assistant prof.	12.5	14.9	17.1	19.4	22.4	23.8	24.4
PhD	56.5	61.2	67.9	71.7	75.5	78.6	60.4
Total	81.9	89.2	98.4	104.4	113.4	119.5	102.7

4. Financing

Table 2 shows income and expenses for research in 2008 - 2014. Since total costs for research in economics are very strongly determined by personnel costs, the growth of total costs resembles the development of available effort shown in Table 1.

Table 2 clearly shows that in spite of the recent period of austerity Erasmus School of Economics has been able to significantly increase its annual income, especially the amounts associated with grants. Note that due to the Standard Evaluation Protocol's definitions that are required for this report, the amount mentioned under 'Grants' only comprises grants from Dutch funding organisations. Grants from the EU and other international sources are incorporated in the amounts under 'Contracts', together with revenue from actual contract research for third parties. The total income generated from EU-funded research projects in 2008 - 2014 is € 1.9 million. Hence income from (Dutch + international) grants is a little over € 10 million, while income from actual contract research is a little under € 7 million. Income from contract research did not increase substantially in recent years. However, when considering that many organisations drastically reduced their budgets for research and development in the past years, maintaining a stable level is already a significant achievement. Nonetheless, Erasmus School of Economics aims to increase the income from contract research in the coming years.

Table 2: **Research income and costs at institutional level (in €1000)**

Funding	2008	2009	2010	2011	2012	2013	2014
Direct funding	2,981.06	3,532.38	3,519.77	2,924.07	4,624.12	4,693.73	4,212.72
Research grants	647.63	742.98	1,245.13	1,353.28	1,421.23	1,511.43	1,326.18
Contracts	1,101.87	799.49	1,263.76	1,678.23	1,191.97	1,408.73	1,386.47
Other	185.89	190.74	132.99	406.93	79.33	275.42	238.49
Total funding	4,916.45	5,265.59	6,161.65	6,362.51	7,316.65	7,889.31	7,163.86
Expenditures							
Personnel	4,469.50	4,786.90	5,601.50	5,784.10	6,651.50	7,172.10	6,512.60
Other ²	446.95	478.69	560.15	578.41	665.15	717.21	651.26
Total expenditures	4,916.45	5,265.59	6,161.65	6,362.51	7,316.65	7,889.31	7,163.86

² Estimated at 10% of the personnel expenses.

5. Results achieved during the reporting period

5.1. Research focus

Erasmus School of Economics increased the critical mass of its research effort and enhanced its coherence by reducing the number of research programmes. Focus areas per research programme will be very briefly introduced, before the more quantitative analysis of the performance will be presented.

The **Applied Economics** programme (8.9 research fte in 2014, excl. PhD's) addresses three main topics: Behavioural Economics, Health Economics and Organisation, Strategy & Entrepreneurship. The Behavioural Economics group's research concentrates mainly on decision making under ambiguity and intertemporal choice. Core topics in Health Economics research include the theoretical and empirical explorations of the causes of social inequalities in health and inequities in health care access. In the third area, organisational theories are combined with the application of techniques in economics to generate new insights relevant for strategy, entrepreneurship and innovation policy.

Research in the **Econometrics & Management Science** programme (10.4 research fte in 2014, excl. PhD's) obviously has two main components. The research of the Econometrics group focuses on data-driven econometric research using advanced statistical methods and techniques. These techniques are applied in a range of domains, but primarily in macroeconomics, finance and marketing. Research in Management Science deals with service logistics, transportation optimisation, health care optimisation and business intelligence systems.

Research in the **Economics** programme (7.3 research fte in 2014, excl. PhD's) addresses three areas: Economics of Organisations, Policy Economics and Economic Geography & Trade. Economics of Organisations revolves around two central themes: the organisation of the decision-making process and organisational aspects of the execution of the work, for example, governance, incentives, recruitment and organisational culture. Policy Economics concentrates on the underlying drivers of income and wealth inequality, which increased almost everywhere in the Western world in recent decades. Economic Geography & Trade concentrates on the causes and consequences of the very unequal distribution of economic activity across space.

Research in the **Finance & Accounting** programme (10.3 research fte in 2014, excl. PhD's) addresses four areas of investigation: Corporate Finance, Corporate Governance, Financial Markets and Accounting. One key theme in the school's Finance research is Forensic Finance, focusing on topics like insider trading and market manipulation, including ways to detect them and designing effective measures to reduce them. In the research regarding Corporate Governance a prominent topic is the remuneration of executives and how their incentives affect their strategic decision making. Accounting investigates why, how and when firms provide information, what incentives firms have to disclose their information, and also how investors use this information efficiently.

The **Marketing** group (5.4 research fte in 2014, excl. PhD's) conducts research with a quantitative modelling orientation and addresses important substantive areas such as Global Marketing, Marketing Decision-Making & Preference Measurement and Marketing Models. An area of particular emphasis is marketing of innovations. Projects in this area address issues like the (cultural and other) factors affecting international take-off of new products, the role social media can play in the proliferation of innovations, new algorithms to make recommendations to consumers based on their past decisions, the circumstances that determine when the advice of intermediaries (e.g. physicians advising about a healthier lifestyle) is accepted or not and which options in insurance policies and pension funds are helpful to let consumers make an informed choice about their financial future. This research addresses many industries, e.g. health care and pharmaceuticals, automotive, insurance, software development and the creative industries.

5.2. Output

The five research programmes produced various types of academic output. Table 3 shows the number of publications per year per publication type. The majority of publications consists of academic articles, followed by PhD theses and conference papers. Books and book chapters are a small minority within the total number of publications. Each publication type is split in a 'Top' and 'Other' category as defined in the collective evaluation protocol used for this evaluation, which is also used by the other institutions.

The number of academic articles increased slightly during the reporting period. This development becomes clearer when all publications are assigned to their respective quartiles based on their 5-year Impact Factor, as shown in Table 4³. Note that Table 4 only refers to refereed articles listed in Thomson Reuters' Journal Citation Reports (JCR), and the totals mentioned there are consequently lower than the total number of articles mentioned in Table 3. Table 4 reflects the results of a stronger focus on quality publications, as especially reflected in a higher number of publications in 1st quartile journals. While at the beginning of the previous reporting period (2001 - 2003), publications in 1st quartile journals constituted around one third of the total refereed publications, at the end of the current reporting period (2012 - 2014) they comprise around 50% of the annual total. The same shift to higher quality publications can be observed in the number of publications within the first decile (also based on the 5 year Impact Factor) where a 37% increase has occurred between the current and previous reporting periods.

The increase in Table 4 does not take into account the simultaneous increase in faculty. Figure 1 shows the annual publications in 1st quartile journals per fte (tenured and non-tenured). It clearly shows that when corrected for research effort (tenured and non-tenured) the total number of publications in 1st quartile journals per fte increased very significantly, in the past 14 years. However, this increase mainly occurred during the previous reporting period and was consolidated during the last six years.

³ A journal belongs to the 1st quartile when the journal's Impact Factor is such that it ranks at least in the highest quartile of the most relevant Journal Citation Report Subject Category (averaged over the last five years), etc. This quartile distribution was formerly known as the 'ISI Quartile' distribution. When Thomson Reuters bought the Institute of Scientific Information (ISI) in 1992 the company was incorporated in the larger Thomson Reuters corporate entity and as such the 'ISI' moniker is no longer valid.

⁴ Articles published in journals with an Article Influence Score (AIS) within the 80th (or better) percentile in 2011 according to www.eigenfactor.org.

⁵ From selected publishers

⁶ From selected publishers

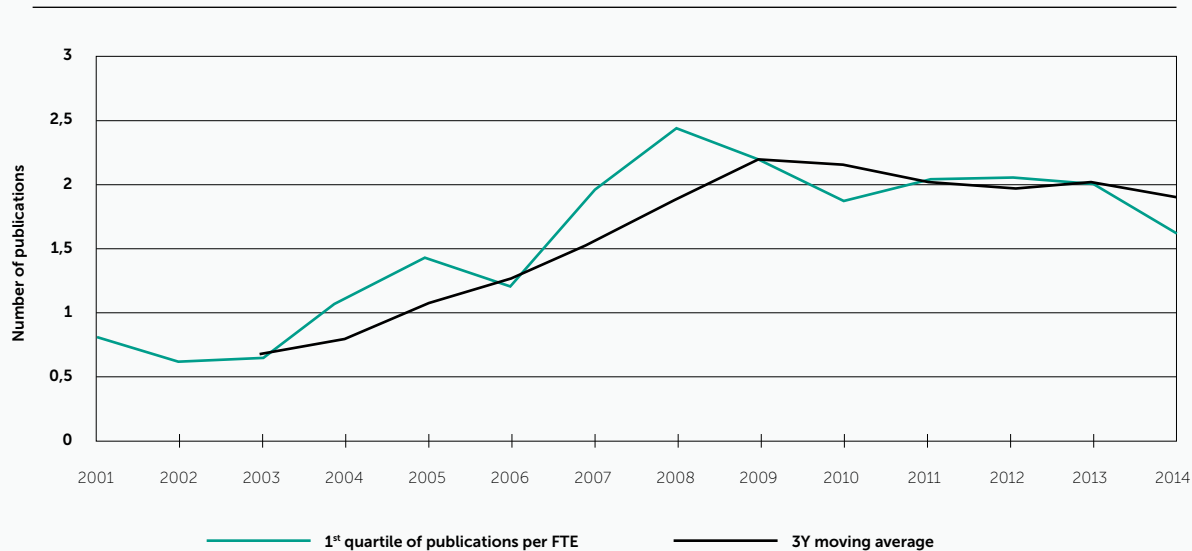
Table 3: Number of publications per publication type, split by quality of the outlet

Type	Quality	2008	2009	2010	2011	2012	2013	2014
Articles	Top ⁴	69	75	63	60	85	73	82
	Other	64	88	102	93	96	113	87
Books	Top ⁵	0	0	2	1	2	3	3
	Other	2	3	1	0	1	0	0
Book chapters	Top ⁶	14	8	20	20	5	14	3
	Other	5	12	7	4	1	3	6
PhD-theses		26	16	22	31	19	25	30
Conference papers		24	28	29	31	50	28	17

Table 4: Number of publications per 5-year Impact Factor quartile 2001 - 2014

ESE	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1 st	25	21	25	37	38	26	42	62	62	57	66	78	82	69
2 nd	22	28	20	22	24	33	36	38	50	45	34	50	46	54
3 rd	18	18	23	22	22	22	13	10	19	22	21	19	22	19
4 th	14	9	11	8	7	8	6	3	11	9	4	6	8	8
Total	79	76	79	89	91	89	97	113	142	133	125	153	158	150

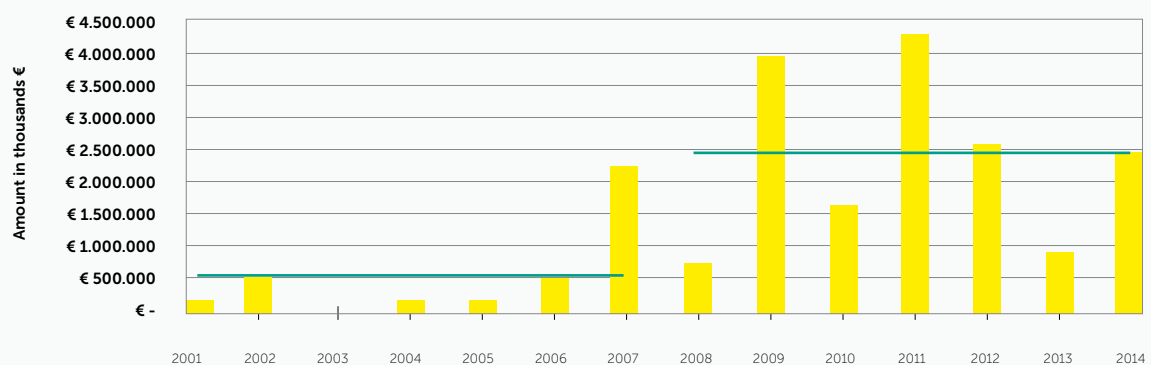
Figure 1: 1st quartile publications 2001 - 2014 (per fte)



5.3. Funding

Erasmus School of Economics considers an increase in external funding a strategic priority, not only to expand its budget but also to obtain more evidence of its scientific excellence. Erasmus School of Economics achieved a very substantial improvement regarding the acquisition of prestigious research grants, which are primarily provided by dedicated government agencies such as NWO, ERC and NSF. Such grants provide an alternative source of research funding for the steadily declining 'standard' research funding, which comes directly from the Dutch government based on the number of students enrolled at Erasmus School of Economics. Thus, the grants allow the school to maintain its research level and even to increase it (see also Table 2). At the same time such grants also provide an extra opportunity to enhance the international prestige of the school. In 2008, the school set up a small, but experienced team as part of the dean's office to help faculty during all steps of the grant application and the administration of the subsequent project. As a result, in 2008 - 2014 the total amount obtained through such grants quadrupled compared to the previous reporting period (indicated by the straight lines, which represent the annual average during the two reporting periods). As Figure 2 shows, this income stream from grants is quite unpredictable. This is partly due to Erasmus School of Economics' choice to concentrate its efforts and expertise concerning grants on applications for prestigious competitions with a high rejection rate, but also substantial amounts received in case of success. Hence, whether one proposal is retained or not can make a significant difference for the annual total. However, the amounts obtained are consumed during projects of 3-5 years (see also Table 2), so the actual internal funding of research projects based on these funds is less volatile than Figure 2 suggests.

Figure 2: Total amounts from research grants secured per year



6. Societal impact

6.1. Perspective on the relationship between town and gown

Erasmus School of Economics was founded by local businessmen. It has been aware of the need to maintain a close relationship between town and gown ever since and the ties with the local community have always been strong. The long experience of collaboration with non-academic partners has deepened the school's perspective on valorisation and societal impact. This experience has also developed Erasmus School of Economics' understanding of the best way to add value in collaborative projects. On this basis Erasmus School of Economics offers society at large a broad range of expertise to accommodate a wide variety of questions in economics and business. The following principles are used to evaluate the suitability of new projects.

1. Focus on impact creation and not on revenue generation

Erasmus School of Economics selects projects where its use of academic methods and advanced expertise in economics can help to make an original contribution that really pushes the state of the art. Such projects provide the best basis for academic publications and hence provide the strongest leverage to the school's reputation as a centre of excellence.

2. Take a comprehensive perspective on compensation, beyond receiving money

Sometimes it can be more interesting to participate in a project without getting paid, to keep complete independence and to avoid confusion about the precise role of the scientists (for example, during a study of a restructuring). Also, access to unique data may be more valuable compensation than cash.

3. Consider opportunities for education, as an important vehicle for valorisation

Education is considered one of the most powerful routes to valorisation for Erasmus School of Economics. Faculty members are encouraged to bear in mind how their involvement in collaborative research projects could help enhance the appeal and quality of their courses, e.g. by involving guest lecturers from companies to talk about the relevance of the project.

4. Assign (for profit) knowledge transfer activities to specialised EUR Holding companies

EUR Holding was set up to facilitate (for-profit) knowledge transfer, based on knowledge developed in the schools. After all, while the faculty is dedicated to knowledge development, commercial knowledge transfer requires different skills. Employees of EUR Holding companies are specialised in these types of activities. EUR Holding is 100% owned by Erasmus University and profits from the EUR Holding companies flow back to the university through dividends.

6.2. Main types of activity to create societal impact

During the reporting period Erasmus School of Economics has invested significantly to enhance collaboration with non-academic partners and to increase its impact on society as a whole. The centennial celebrations in 2013 - 2014 provided an excellent occasion to tighten the relationships with various groups in society, for example, through symposia, public lectures (by faculty and alumni), workshops and exhibitions. At a more systematic level Erasmus School of Economics has increased its effort for especially the following types of valorisation:

1. involving third parties in research projects, to enable co-creation of new knowledge;
2. contributing individual expertise in committees and advisory boards, to improve public policy and corporate strategy;
3. engaging with the public at large, to inform and develop public opinion;
4. knowledge transfer through spin-off companies.

6.3. Examples of impact creation

Below we will provide some examples for each one of the four main types of activity mentioned above.

6.3.1. Involving third parties in research projects

During the reporting period all programmes were involved in large collaborative initiatives. Only a few can be mentioned here.

Our management scientists expanded their long tradition of international collaboration in the area of logistics. They played a leading role in the creation of the Dutch Institute for Advanced Logistics (Dinalog), a national initiative to stimulate collaborative research in logistics. Several projects were executed under the Dinalog scheme. The group also enhanced the formal ties with the city of Rotterdam and the port through the joint initiative of SMARTPORT and tightened the relationship with Dutch Rail through a multi-year agreement. NWO's scheme for Sustainable Logistics further extended the long list of collaborative projects in this domain, as did the EU through ON-TIME: a project concerning optimal networks for train integration management across Europe with a budget exceeding 10 million euro and involving 19 organisations from seven countries. For their continuing work on integrating their research results in organisational decision making, in particular for their contribution to the new Dutch Rail time table, researchers in this group received INFORMS' Edelman award.

Our researchers in applied economics coordinated two large initiatives to enhance the support of research and education concerning entrepreneurship. The first was a collaboration between the three universities in the province of South Holland (in Leiden, Delft and Rotterdam) together with banks, municipalities, consultancies and others, to stimulate entrepreneurship among students and researchers. A subsequent project was focused on Rotterdam itself. Both initiatives involved multi-million euro grants from the Dutch government and included many organisations in the region. While the primary orientation of this programme was obviously rather applied, the collaboration also stimulated more fundamental research: it led to a publication in Science about the genetic foundation of a talent for entrepreneurship, among other things.

In an international project co-financed by the EU called RISK, Erasmus School of Economics' monetary economists investigated opportunities to better assess systemic risk in the banking sector, by using extreme value analysis. The consortium included six other universities, e.g. Universitat Pompeu Fabra, LSE and Shanghai Jiao Tong University. The project also involved consultancies (for example, McKinsey, KPMG), banks (Banco de Sabadell, Credit Suisse, Deutsche Bundesbank) and insurance companies (Zurich Insurance). A total of 10 doctoral students were trained by the universities involved, in close collaboration with the other partners, and an additional 20 post-doctoral researchers were hired for the project.

The Marketing department founded the Erasmus Centre for the Marketing of Innovation (ECMI). Innovation is essential to continued growth, but requires that innovations are commercialised well. ECMI was set up to make Erasmus School of Economics' analytical tools and academic expertise about marketing of innovation better accessible for third parties. ECMI has already executed several projects together with large companies, often in collaboration with other leading universities. For instance, it is performing a study on the effectiveness of multi-channel marketing together with General Motors, which is being executed in the US, Europe and China in collaboration with MIT and INSEAD.

6.3.2. Contributing expertise in committees and boards

Participating as experts in high-level advisory committees for government policy or corporate strategy can be a powerful way of putting one's scientific expertise to practical use. Erasmus School of Economics encourages its faculty to accept such responsibilities and facilitates the combination of these responsibilities with work at the university. Procedures exist to assess possible conflicts of interest between these appointments and the obligations towards the university. We will only provide some examples of the current committee memberships.

Job Swank and Casper de Vries are members of the Social and Economic Council of the Netherlands. Bas Jacobs is an academic partner of the CPB Netherlands Bureau for Economic Policy Analysis and a member of the advisory board of the Norwegian Centre of Taxation. Benedict Dellaert is a member of the Partner Research Council of Netspar and a member of the Supervisory Board of Independer.nl. Eddy van Doorslaer is an advisor to the World Health Organisation. Martijn de Jong acted as an expert witness to the Court of Appeal in Amsterdam. Elbert Dijkgraaf is a member of the Dutch House of Representatives (Tweede Kamer).

Membership of academic committees provides a specific opportunity to develop the field. Peter Wakker, Philip Hans Franses and Eddy Van Doorslaer are members of the Royal Academy of Arts & Sciences. Faculty members serve on many evaluation committees for funding organisations like NWO and ERC, where important decisions are made about investments in future research. Philip Hans Franses will chair the ERC Evaluation Panel SH1 Starting Grants for the second time in 2016.

Finally, several professors with a part-time position at Erasmus School of Economics influence economic policy elsewhere. For instance, Jarig van Sinderen is the chief economist at the Authority for Consumers and Markets and Job Swank is Director Monetary Affairs and Financial Stability at De Nederlandsche Bank (DNB).

6.3.3. Informing public opinion

During the reporting period basically everyone in the world has become more and usually quite painfully aware of the societal relevance of a better understanding of economics. This affected the general public's perception of the relevance of the dismal science, although it did not automatically make economists as such more popular.

Nonetheless, several economists experienced a strong surge in requests for media appearances and presentations to explain developments to a lay audience. As part of this development several scholars at Erasmus School of Economics also became media 'regulars', commenting on economic developments on TV and radio, in 'science cafes' and many other events aimed at the general public. Most notable examples were professors in macroeconomics and monetary policy such as Bas Jacobs, Casper de Vries and Ivo Arnold. Erasmus School of Economics embraces these opportunities to inform public opinion and has for instance used its centennial celebrations to inform the general public even more about the expertise available within the school. It does so on a 'quality first' basis: the media appearances should provide an opportunity to display scientific expertise and should not be pursued for their own sake. At the same time the media engagement is a challenge in itself where academic excellence alone does not offer a guarantee to success and other knowledge and skills are required as well. Therefore Erasmus School of Economics offers facilities, training and support for researchers to properly interact with the media.

6.3.4. Knowledge transfer through spin-off companies

Important leverage for Erasmus School of Economics' knowledge transfer is provided by EUR Holding. EUR Holding is dedicated to contract training, contract research and knowledge transfer based on knowledge created at Erasmus University. EUR Holding contains 18 limited companies (B.V.'s), with a total annual revenue of almost € 35 million. While EUR Holding covers activities at the whole university, its links to Erasmus School of Economics are particularly strong: the total annual revenue of the companies linked to Erasmus School of Economics is almost € 22 million. Harry Commandeur, former dean of Erasmus School of Economics, is the managing director of EUR Holding. Philip Hans Franses, dean of Erasmus School of Economics, is member of the Supervisory Board of EUR Holding. Examples of EUR Holding companies, dedicated to knowledge created at Erasmus School of Economics are:

- EURAC B.V., dedicated to post-graduate training in accounting and finance (which in particular trains many aspiring Certified Public Accountants and Certified Controllers each year). EURAC B.V. cooperates with Erasmus School of Economics in ESAA (Erasmus School of Accounting and Assurance) to provide executive education;
- International Housing Studies B.V., dedicated to training and research in the context of urban development, especially in developing countries;
- Smartport B.V., dedicated to research regarding Port Logistics;
- Institute for Sales and Account Management B.V., which has trained thousands of sales professionals.

All these companies were founded some years ago and have established a clear track record in the meantime. But EUR Holding also creates opportunities for new ventures. To foster new initiatives EUR Holding includes one company, Erasmus Research & Business Support B.V., which is dedicated to the support of start-ups. It thus serves as an incubator for new companies which can gradually develop into independent companies in EUR Holding. A good example of such a new initiative is S Ray. It utilises statistical expertise from Erasmus School of Economics' department of econometrics and combines it with expertise in organisational behaviour from Rotterdam School of Management, to assess to what extent people in an organisation share a common view on its strategy and routines. S Ray has provided consultancy services to large companies such as Unilever, ABN AMRO Bank and ProRail and to large public organisations such as the Dutch Tax and Customs Administration.

7. PhD programme

Erasmus School of Economics' doctoral education is both an important element of its academic function and an important vehicle for creating impact in society. Erasmus School of Economics has continued to enjoy a healthy level of interest from high-quality prospective doctoral students and realised a low drop-out rate (see Table 5). Nonetheless, the average level of the PhD students still shows room for improvement.

The graduate programmes of Tinbergen Institute and ERIM play a vital role in the training of doctoral students at Erasmus School of Economics. During the reporting period both programmes were selected as exemplary graduate programmes and considered "leading, also internationally" in a dedicated initiative by NWO that stretched across all academic domains⁷. Each doctoral student at Erasmus School of Economics is registered at TI or ERIM, needs to meet the stringent requirements for doctoral training of the respective institute and also enjoys an elaborate set of support services, including regular meetings with the director for graduate education at each institute. Recent improvements in these services include a placement training, to help PhD students to obtain a good position after graduation. More details about TI, ERIM and their respective provisions to support doctoral education are provided in Appendix B and C, respectively.

During the reporting period a total of 169 doctoral students successfully defended their dissertations at Erasmus School of Economics. Table 6 shows where they subsequently found employment.

The majority pursued a career in academia. This percentage is comparable to what other Dutch schools in economics achieve. A placement of more than 50% in academia is relatively high, especially compared to other disciplines (also internationally). For example, in Science, Technology, Engineering and Medicine many PhD graduates accept research positions in industry (or hospitals), while in Humanities and other Social Sciences many PhD graduates accept positions in the public sector, due to lack of academic positions. Most of our PhD alumni who stayed in academia found a job at a Dutch university, but an increasing number continued at schools abroad. Outside academia, alumni tend to enter large organisations, both in the public and the private sector, or start their own company. Very few enter a small/medium-sized organisation that they did not start themselves.

⁷ The aim of this NWO initiative was to strengthen excellent elements of the Dutch graduate education environment, to enhance the international appeal of doctoral education in the Netherlands. As part of this initiative each selected graduate programme received a block grant to hire 4 additional doctoral students.

⁸ Only PhD candidates employed by Erasmus School of Economics.

Table 5: PhD-candidates at institutional level⁸

Enrolment starting year	In	<= 4y	[4y,5y]	[5y,6y]	[6y,7y]	>7y	Completed	Ongoing	Dropout
2004	6	0	6	0	0	0	6	0	0
2005	12	3	5	1	2	0	11	0	1
2006	24	5	11	4	2	0	22	1	1
2007	18	6	8	1	2	0	17	1	0
2008	18	6	4	4	0	0	14	2	2
2009	23	1	12	3	0	0	16	5	2
2010	25	7	4	0	0	0	11	13	1

Table 6: Placement of PhD alumni 2008 - 2014, per sector

Sector	Percentage
Academia	52%
Public sector, other	14%
Private sector, large	21%
Own company	10%
Other	3%

8. Research integrity

Given the emphasis which Erasmus School of Economics puts on developing its academic brand, the preservation of integrity in all its research activities is paramount. Even a single incident, no matter how atypical for our normal practices, could cause serious damage to our reputation and may haunt us for years.

Thus, when the EUR initiated a broad university-wide initiative to introduce a range of practices to increase attention for research integrity, Erasmus School of Economics contributed in a leading role. An important initiative was the Taskforce Scientific Integrity, which is currently headed by Erasmus School of Economics' Bauke Visser (also general director of Tinbergen Institute). Based on the recommendations of this task force several measures were taken.

For instance, a dilemma game focusing on professionalism and integrity in research was developed. This game has been incorporated in the curricula of the graduate schools, such as TI and ERIM. The game introduces many of the integrity issues that may present themselves to researchers and encourages them to discuss these among themselves. The game has also been played on several other occasions, involving more senior researchers as well. The game thus fosters debate about scientific integrity beyond the graduate student community.

Good scientific practice can be significantly leveraged by clear procedures for data storage and data access. Several cases of questionable practices reported in the media involved clumsy approaches to data storage, leading to detrimental effects of, for example, stolen laptops and lost USB-sticks. At the EUR, standard procedures have been introduced across the university to facilitate (long term) storage of research results and safe access to them on campus and remotely, thus facilitating collaboration in an international consortium. Furthermore, a new procedure for complaints regarding scientific integrity was introduced in 2012, to allow for rapid, bottom-up notification when people encounter idiosyncratic research practices. At the heart of many of the reported cases around lack of scientific integrity, in the Netherlands and abroad, a break-down of normal communication was found, particularly a lack by junior researchers and others to question the dubious approach followed by a dominant colleague. The complaints procedure is meant to enable an 'early warning' where necessary and includes the availability of a campus-wide confidential advisor regarding integrity issues (currently Erasmus School of Economics' Patrick Groenen, head of the Econometrics department), who is supported by deputies at each one of the other schools at the EUR.

Finally, for cases considered as necessitating further review, a campus-wide Scientific Integrity Committee exists, headed by a former public prosecutor and emeritus professor of criminal law, to judge cases of significant deviation from standard scientific practice.

9. Self-assessment of past performance

9.1. Summary of current position

The previous IPRC (2008) was very positive about Erasmus School of Economics and it regarded the school as too modest about its international ambition: to reach the global top-30. Since then Erasmus School of Economics further improved in several ways as has been explained above. It improved the quantity and quality of its results, and some of its research groups can be considered to be among the most influential in the world. It obtained further recognition for its doctoral education and has put significantly more effort in creating its visibility in society at large and in valorisation. Concerning viability, Erasmus School of Economics enjoys a committed work force with a good balance between seasoned scholars and young talent and it has also become significantly less reliant on direct funding from the Dutch government. Based on this progress, evidence from the leading international rankings⁹ and more systematic analysis of Erasmus School of Economics' academic output (see below) it can be argued that Erasmus School of Economics has performed very well in the past years and has now indeed become part of the best 30 schools in economics world-wide. It is very unlikely that it could have performed much better in this respect, for example, by reaching the top-20 worldwide, and under the current conditions it is unlikely that it will achieve this any time soon.

9.2. International competition

This has to do with the fact that, even more than other academic disciplines, economics and business is currently very much dominated by the ideas from and practices established by an elite group of American universities. More precisely, the global list of what are generally considered the best schools in economics and business starts with approximately 15 US institutions. This set of elite institutions is very robust for different ranking methodologies and hardly changes over time. In fact, in several ways these top institutions, especially the top-10, behave like a league of their own, which determines the rules of the game for the others as well.

One example of the top-10 behaving as a community that is hard to penetrate is that 85% of the faculty in these top-10 institutions have PhDs from one of those ten schools. (10 % have PhDs from other US institutions and 5% have a PhD from Europe, predominantly from a top school in the UK). Furthermore, in many important ways these elite US institutions have a solid grip on the global economic discourse. For instance, faculty from these schools occupy virtually all of the editor and co-editor positions for the absolute top journals in economics. In the past years these top schools obtained 75% of the Nobel prizes in economics (the remainder almost exclusively went to researchers at other US institutions¹⁰).

Additional examples can be given of the strong influence of the top 10 US schools on the development of economics in Europe as well. At the leading schools in the UK, which immediately follow the top 15 US schools in the rankings, on average still 60% of the faculty hold a PhD from a top-10 US school. Also, the majority of the members of the ERC panels for economics and management (so-called panel SH1) hold a PhD from one of these US schools. Bearing in mind that only a small minority of economics and business faculty in Europe hold a PhD from those schools it is even more striking that people who received their doctoral training there also constitute the majority of the winners of ERC grants in SH1.

9.3. Circumstances in continental Europe

Thus, in several ways crossing the Atlantic from a top school in the US to a top school in the UK does not yet make a very large difference in the global landscape of economics and business. However, crossing the Channel to a leading school further east does. The percentage of faculty with a prestigious US PhD drops dramatically at the best schools from continental Europe, the first of which typically appears around place 30 in a global ranking. Unlike the elite institutions from the US and the UK the schools in continental Europe stand in a tradition where the research activities are combined with large scale teaching operations that charge comparatively low tuition fees and rely heavily on government funding. This applies especially to the undergraduate level, where much teaching is not in English. This puts the continental schools in a different playing field, where elite circumstances do not apply and scientists – even the most talented ones – are handicapped when they cannot teach in the native language. The differences between the circumstances at the best schools in continental Europe and those at the best schools in the US/UK are significant and in several respects difficult to overcome.

⁹ For example the Academic Ranking of World Universities (the Shanghai Ranking) Economics/Business 2014, the QS World University Ranking (Business & Management, Economics & Econometrics, Accounting & Finance) 2015 and the UT Dallas Ranking 2014.

¹⁰ The most recent exception, Jean Tirole at the Toulouse School of Economics, obtained his PhD at MIT and worked there for several years before he returned to France.

9.4. Resulting status of Erasmus School of Economics in global perspective

As a result of its strong performance Erasmus School of Economics has solidly established itself as one of the leading institutions in continental Europe. It depends on the precise ranking methodology which school is ranked highest in that part of the world. In the 2014 Shanghai (ARWU) ranking for Economics and Business it was Erasmus University, at position 28 worldwide. The Shanghai ranking rewards sheer size of output in journals for economics and business. This benefits Erasmus University, because the scale of its academic production in this area is only matched by Harvard University. In other rankings other schools, for example, the Stockholm School of Economics, the University of Toulouse or Bocconi University, are sometimes ranked first, but Erasmus School of Economics is always part of 'the usual suspects': in all the dominating rankings it is part of the top-3 in continental Europe and it never ranks below position 40 worldwide.

The same relative position of the leading schools in the US, the UK and continental Europe is reflected in the analysis of the citation impact of academic articles produced per institution in 2008 - 2013, as performed by the Leiden based Centre

for Science and Technology Studies (CWTS). Figure 3 relates the Mean Normalized Citation Score (MNCS) of the Erasmus University in the field of Economics and Business to the total number of publications.¹¹

Note that a MNCS of 1 is considered to be the 'World average'. The Erasmus University's 1.5 can be considered as an indication that the university's citation impact of publications in Economics and Business journals can be considered 1.5 times better than the 'World Average'.

¹¹ Note that due to technical limitations of the Web of Science database it is only possible to do this benchmark on a university-wide level, which means that, in the case of the Erasmus University, the output of both Erasmus School of Economics and RSM (Rotterdam School of Management) is used to calculate the Erasmus University's MNCS.

Figure 3: Mean Normalized Citation Score (MNCS) by total number of publications (2008 – 2013)

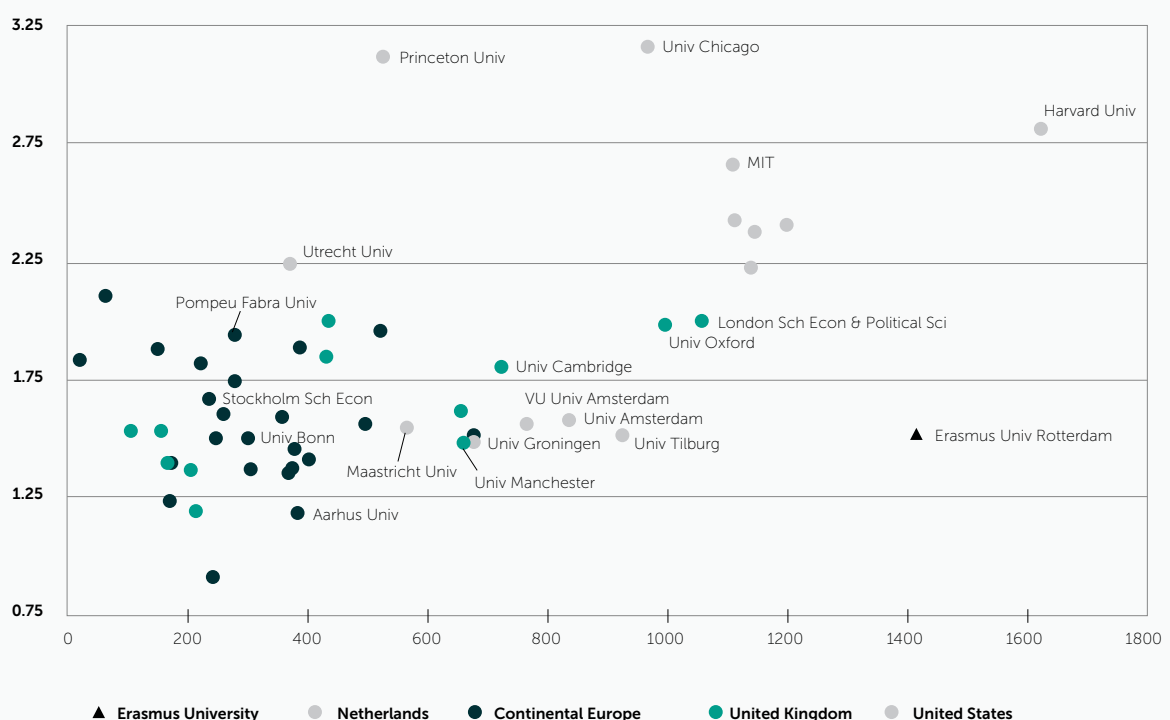
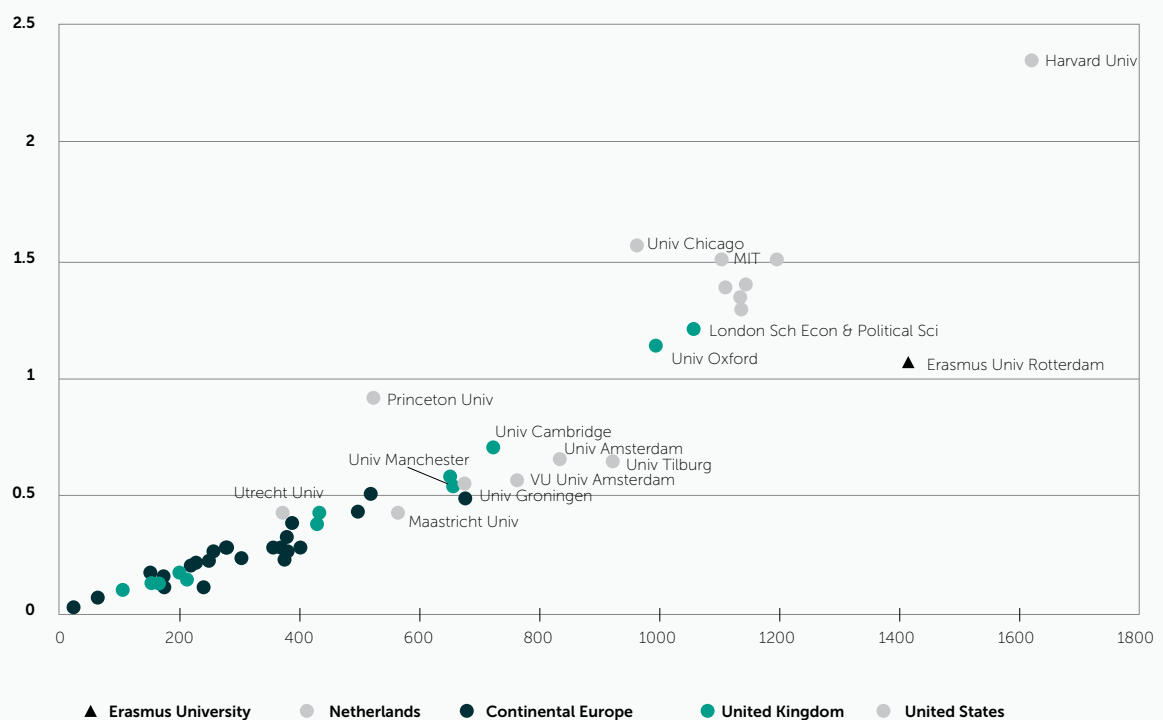


Figure 4 takes into account the number of an institute's publications as an element of creating impact per se. After all, five publications with an average number of citations have created more impact than only one. When incorporating scale as a factor of impact creation in this way and including the absolute number of publications accordingly, the equation pushes the Erasmus University ahead of the competition in continental Europe and into the lower level of the premier league of leading UK / US universities.

Figure 4: **Total Normalized Citation Score (TNCS) by total number of publications (2008 – 2013)**



10. Analysis of strengths, weaknesses, opportunities and threats

Based on the evidence regarding Erasmus School of Economics' current position, we can conclude that the school has displayed better than almost any other the ability to combine the operational conditions of continental Europe with a visibility and performance resembling the elite schools in the Anglo-American tradition. Hence, its strategy for the coming years reveals two main components. On the one hand it needs to preserve its position as a leading school in continental Europe and it should ensure that others from the same region and essentially dealing with the same conditions will not gradually get ahead of it. On the other hand, it should simultaneously try to narrow the gap with the global elite schools. This does not mean slavishly imitating the practices of those schools, but still leaves opportunities to capitalise on characteristics of Erasmus School of Economics. Obviously, the two components of the strategy can mutually reinforce each other.

Thus, when contemplating ways to improve even further it is important to keep in mind that Erasmus School of Economics is (still) a predominantly publicly funded school in the egalitarian and accessible higher education context of continental Europe. However, to further improve in the longer term it should especially consider its strengths and weaknesses relative to the characteristics of the best US schools. This requires a strategic balancing act. Especially in times of austerity Erasmus School of Economics needs to make sure that plans to aim even higher remain realistic and it should take budgetary modesty into account. It should respect that in the Netherlands performance associated with an elite research institution must remain embedded in a context of mass education. Consequently, Erasmus School of Economics needs to take into account that 'the most bang for your buck' is achieved in both education and research. Hence plans to ensure further progress, that is, ultimately to match schools in the UK and the US that work on a different basis and do it very well, should distinguish between a strategy for the coming years and one for a much more distant future. The first one is aimed at improving Erasmus School of Economics' performance within the current constraints of the continental European tradition, while the longer term strategy is aimed at gradually adopting more of the practices of the current elite schools.

10.1. Strengths

Erasmus School of Economics enjoys:

- **A stable environment, committed to excellence in research**
Regular surveys reveal that faculty and staff are generally satisfied with their working conditions. The school enjoys low attrition and is able to attract scholars who are committed to excellent research. This does not only apply

to faculty on the pay-roll of Erasmus School of Economics, but also to visiting researchers.

- **Coherent research programmes of significant size, with global visibility and standing**
Each research programme has sufficient critical mass to influence the global discourse in its respective field.
- **An ability to perform original research that can influence the research agenda**
Erasmus School of Economics' success in obtaining prestigious grants is one type of evidence for its ability to launch original research. Its ability to collaborate with non-academic partners to explore new problems and approaches is another one. Especially where it concerns innovations to the quantitative foundation of economic models and combining theory development with empirical studies, Erasmus School of Economics possesses many experts who, individually and as a group, can influence the direction of future research.
- **High proficiency in a quantitative approach to economics, across the school**
Economics at Erasmus School of Economics relies heavily on quantitative modelling, which is taught as early as the undergraduate level. This renders faculty and students, especially students in econometrics, well prepared to contribute to the dominating approach to economics. This is another asset that could be exploited more in the development of stronger relationships with leading schools in the US.
- **A large number of good graduate students in specialized areas of economics, for example, health economics, policy economics and econometrics**
Erasmus School of Economics offers several specialised masters that are closely related to its most reputed areas of research. Especially these programmes offer a good way to prepare talented students for subsequent pursuit of a PhD in the UK or the US.

10.2. Weaknesses

Erasmus School of Economics has:

- **Relatively few faculty with a PhD from a leading US school**
Schools like Stockholm School of Economics, Toulouse School of Economics and Bocconi University have more economics faculty with PhDs from US top schools. Even more specifically, Erasmus School of Economics has a relatively high number of faculty with a PhD from Erasmus School of Economics. Together with the tendency to recruit relatively large numbers of its own students (especially in econometrics, but also in other research areas) for its PhD positions this creates an environment that may be too much 'local for local' to increase its global impact and to increase its appeal to foreigners.

- **Limited budgetary flexibility compared to other top schools**

Erasmus School of Economics' current budget is too small to compete effectively with the leading schools in the UK and the US.

- **Limited ability to place PhD alumni in tenure-track positions at leading US schools**

As explained above it is very difficult for someone with a PhD from Europe to enter a tenure-track at a leading US school. Those who succeed in doing so typically have a PhD from a leading UK school. A limited ability to place students at top US schools reduces the appeal of a school like Erasmus School of Economics to world-class doctoral students, despite the other benefits which the school offers.

10.3. Opportunities

- **Economics and business offers a vibrant research domain, presenting many fascinating research challenges and excellent opportunities to exploit Erasmus School of Economics' research capabilities**

Around the world a common understanding exists that many research questions in economics and business have not yet been sufficiently investigated. This conviction does not only exist in academia but is also widely understood elsewhere in society, and the painful economic effects during the reporting period have helped to enhance this understanding. Many opportunities exist to deepen existing models, exploit new technologies in combination with more traditional economic theory, and to confront those theories with new developments in e.g. law, philosophy, psychology, medicine or computer science. This opportunity is not unique for Erasmus School of Economics. However, given Erasmus School of Economics' breadth and its excellent access to experts in other areas (at the Erasmus University and elsewhere) the school is in a favourable position to exploit the current opportunity. More specifically, while it will be difficult for Erasmus School of Economics to become part of the global top-20 overall, it can realistically try to excel and become truly world class in some areas. Specific domains where Erasmus School of Economics is in an excellent position to advance knowledge are health inequity, marketing of innovation, regulation of the financial sector and sustainable transportation planning. Note that these areas are well aligned with international research priorities, such as the Grand Societal Challenges expressed by the EU. Furthermore, Erasmus School of Economics possesses world-renowned strengths concerning behavioural economics and econometrics and with regard to empirical research based on field studies. Finally, in all these areas it has demonstrated the capability to contribute

to theory and also to provide more applied guidance; this combination is an additional strength in itself. This opportunity can especially be exploited in the context of international network development (see chapter 11).

10.4. Threats

- **An inadequate Dutch science policy with insufficient appreciation for the social sciences**

Funding of the social sciences is under pressure in many countries, but still the Dutch government's approach is worrying. It is criticised inside and outside the Netherlands, for example, by the Royal Netherlands Academy of Arts & Sciences (KNAW) and by the European Commission. Traditionally social sciences, including economics, have been quite strong in the Netherlands but the current government's approach is not helping to keep it that way. This reduces Erasmus School of Economics' ability to compete internationally.

- **The growing appeal of institutions in other parts of the world as a collaboration partner for US schools**

While schools like Erasmus School of Economics may strive to collaborate more with leading US schools, the reverse is not necessarily true. Especially from a long-term perspective one could wonder if leading schools in the US agree that development of international relations should be focused on Europe as opposed to other areas of the world. In particular, the strong development of East-Asia as a market for higher education and research collaboration may cause the US schools to concentrate their development efforts there.

11. Next steps

Based on the above-mentioned considerations Erasmus School of Economics' strategy for the coming years will include the following priorities.

11.1. Preserve strong ties between research and teaching

Erasmus School of Economics will have to address the tension between the need to teach many and the desire to perform excellent research. It is a matter of fundamental principle that it will not resolve this tension by creating separate environments for a 'teaching college' on the one hand and a much more exclusive 'research university' on the other, with largely different faculty. At Erasmus School of Economics, research and education will remain strongly connected. In the eyes of some that will make Erasmus School of Economics less attractive to the international labour market of top scholars. However, it also provides the ability to influence the hearts and minds of hundreds of 'ordinary' economists with state of the art insights. That ability significantly leverages the school's potential to create societal impact. Few schools in the Netherlands, in economics or in other disciplines, have produced more executive leaders in both the public and private sector than Erasmus School of Economics, and teaching at Erasmus School of Economics therefore creates an almost unique opportunity to have an indirect yet nonetheless significant effect on the future direction of society.

11.2. Obtain extra funding

Given that funding from the Dutch government is expected to decrease even further, more effort will be required to obtain additional funding. More ambitiously, to effectively engage with the top schools in the UK and the US creating significantly larger budgets over time will be essential.

Even without radical changes clear potential exists to increase income, for example, by obtaining more grants. The recent success in obtaining grants is encouraging but it is far from evenly distributed across the school. During the reporting years especially junior researchers obtained grants. Recently Erasmus School of Economics has become more successful in acquiring grants for more mature researchers (for example, NWO's Vidi and Vici Grants and ERC Starting Grants) but its success in obtaining grants for established scientists could still be improved. Hence, more effort will be put in encouraging the senior faculty to submit grant proposals. This applies especially to Economics and Econometrics & Management Science, given that success concerning grants is also far from evenly distributed across the research programmes. Both programmes will increase their effort to obtain grants by enhancing the systematic collegial support within the department during grants writing and by more rigorously

targeting staff members with high potential for writing winning grant proposals. Across the school, in future recruitment efforts the potential of candidates to obtain grants will play a more important role as a selection criterion.

11.3. Develop much stronger ties with the leading US schools

Given the dominance of the top-10 US schools, Erasmus School of Economics should develop much stronger ties with them. Time and money will be made available to deepen existing relationships with, for example, the University of Chicago (applied economics and economics), MIT (applied economics and marketing), the University of Pennsylvania (marketing), Harvard University (applied economics), UC Berkeley (economics), Stanford University (econometrics & management science) and New York University (finance & accounting). Erasmus School of Economics' relatively young faculty should be encouraged to spend more time at those institutions during sabbaticals and other visits. Professors from those institutions should be encouraged to come to Rotterdam more often, for short time visits or longer projects. Resources for international seminars at Erasmus School of Economics, involving prestigious speakers, will be expanded. Erasmus School of Economics faculty should also put more effort into co-authoring papers with faculty from those schools and Erasmus School of Economics' best master students should receive more encouragement to pursue their PhDs there, instead of in Rotterdam. Finally, during its recruitment of new tenure trackers Erasmus School of Economics should put more effort into recruiting more talent from those schools.

11.4. Increase the appeal of the doctoral training

Erasmus School of Economics is already able to attract good doctoral students, but it will still increase its effort to recruit more truly world class talent for its doctoral programme. To achieve this it is important that more PhD alumni will be placed at schools that are ranked above Erasmus School of Economics, especially those in the US. Ambitious students will make a conscious choice to receive their doctoral education at a school that offers excellent opportunities to subsequently secure a tenure track at a prestigious institution. To attract more of the very best doctoral students, Erasmus School of Economics needs more evidence that its PhD alumni can indeed achieve such a placement. Therefore, Erasmus School of Economics will expand the support and training it offers to its students regarding academic job placement. In doing so, it will build on the training already offered by TI and ERIM. It will also extend the opportunities for its PhD students to spend some months abroad in preparation of a foreign placement, in addition to inviting more scholars from those institutions to Erasmus School of Economics (see above), where they

also can meet PhD students and work with them. Erasmus School of Economics will also make more use of 'outgoing' fellowships and similar grants, such as those offered by the EU (Marie Curie) and NWO (Rubicon), which support the placement of PhD alumni abroad. So far, Erasmus School of Economics' effort to obtain grants has almost exclusively been used to support researchers who come to or already are at Erasmus School of Economics and will spend the grant in Rotterdam, but the available expertise on grants can also be used to leverage the international placement strategy.

11.5. Put more emphasis on producing high quality papers

There is a common denominator in the preceding priorities: the increased emphasis on quality (e.g. of students, international relationships and prestige of grants) over quantity. That may be the most important strategic priority, also for the longer term.

It has been explained above that Erasmus School of Economics has followed a strategy to produce less but better papers. This should be intensified. Even if the school would only produce half the number of papers it puts out now, it would still be a very visible player in economics globally; even more so if the average quality of those papers would be significantly better than the current ones. Hence, the encouragement of a dedication to excellence will be intensified.

Producing better papers on average is not just a matter of 'taking more time' or 'thinking harder'; the quality of one's (academic) network is very important too. Therefore, faculty will be strongly supported in the development of their professional networks, improving their standing and 'getting closer to the fire' (including bringing more people who are close to the fire to Erasmus School of Economics). This will provide more opportunity for Erasmus School of Economics to use its broad collective experience to coach faculty along the way and together achieve higher average quality of its academic output.

The stronger emphasis on producing high quality papers will make it at least as demanding to work at Erasmus School of Economics, and at least as risky, both for the individual researcher as for the school as a whole. But it would also make it more exciting and it will increase Erasmus School of Economics' appeal to people who cherish the freedom to discover. Maintaining and growing this appeal and preserving the ability to resist the increasing external pressure to reduce science to what can be counted only, will be key to further develop as a truly great school that is admired around the world.



Appendix A

Research programmes

A. Research programmes

A.1. Applied Economics

This programme plays a profiling role in Erasmus School of Economics, as it aims to contribute to the development of new and fundamental fields in economics and to be active in areas of high societal relevance. Being an incubation centre implies that the resources of the department adapt to where fundamental innovation can be expected. This relates to both teaching and research. Fascinatingly, fundamental novelty and societal relevance often overlap.

Currently, the programme consists of three groups: Behavioural Economics, Health Economics and Organisation, Strategy and Entrepreneurship. We aim to further integrate these different themes and to expand into other emerging areas of high scientific promise and societal relevance. Jointly with the Erasmus Holding, initiatives have been undertaken around happiness economics, urban economics and development, and the economics of humanities.

Economic analysis has been dominated by the neoclassical paradigm of human rationality. Behavioural research has shown that people often violate the basic tenets of rationality in a predictable way. Incorporating these insights have led to a behavioural revolution and the replacement of homo economicus by homo sapiens. The Behavioural Economics group's research concentrates mainly on decision making under ambiguity (probabilities unknown) and intertemporal choice. The particular strength of the group is that it can both do sophisticated theoretical research and experimental and field research. The interplay between these types of research leads to new models of decision making that better describe real-world behaviour.

Health Economics is an important new area of Applied Economics in which fundamental developments and societal relevance come together. Core topics of the research programme include the theoretical and empirical explorations of the causes of social inequalities in health and inequities in health care access. This includes econometric analyses of health care utilisation as well as of behaviour more generally, including the linkages between health and labour force participation.

Merging organisational (strategy, entrepreneurship, innovation and governance) viewpoints and the application of the economics toolkit provides exciting new insights relevant for both the personal and firm level as well as the industry, region and country level. Thorough strategic decisions of firms are decisive for survival and growth in modern economies characterised by flexibility and turbulence, and entrepreneurship plays an essential role as an agent of change and generator of new jobs.

Many synergies exist between the three groups as well as

between the department of Applied Economics and the other departments of Erasmus School of Economics. For example, health insurance take-up in developing countries is often low because people have distorted beliefs about their probability of ill-health. Dealing with such distorted beliefs is part of the toolkit of behavioural economics and these insights may in turn lead to higher health insurance coverage and improvements in social welfare.

Key publications

- Rietveld, C.A., et al. (2013), GWAS of 126,559 Individuals Identifies Genetic Variants Associated with Educational Attainment, *Science*, 340(21 June), 1467-1471.
- Abdellaoui, M., A. Baillon, L. Placido and P. Wakker (2011), The Rich Domain of Uncertainty: Source functions and their experimental implementation, *American Economic Review*, 101(2), 699-727.

Quality

Our group's focus on innovative topics and societal relevance has paid off as evidenced by its success in external grant applications in recent years (REI, ERC Starting Grant, Marie Curie, Veni, Vidi, Vici). In order to sustain our leading position in the field, we intend to leverage the vast experience in obtaining these grants by helping young and talented researchers to submit new and innovative grant applications. The quality of our research group is not only indicated by the number of publications in top (field) journals, but also by citation rankings of key authors, placements of our PhD students at other very good universities (for example, Bocconi, Harvard, Nottingham, Warwick, UCLA) and (editorial) board positions (for example Management Science). To further stimulate young talent we will regularly invite top researchers for presentations and visits and appoint world class scholars to long term visiting positions. As young talent has grown into more senior positions, we expect a growing impact of our research by a further increase in citations, better placements of (PhD) students, and more positions on (editorial) boards.

Relevance to society

Health economics, behavioural economics, and entrepreneurship and strategy are all areas of research with high societal impact and this impact is likely to increase in the coming decade. Increasing health expenditures and the changing market for health have fuelled research in health economics, the realisation that people's preferences are often unstable and they can be nudged in the direction of socially desirable behaviour has led to a strong increase in policy attention for behavioural economics, and the surge in innovation and new business formation has led to an increased

interest in the economics of entrepreneurship and strategy. Other areas where our group can have a societal impact are in the measurement of happiness and the inclusion of moral values into economic modelling. While our group's focus has largely been on academic research, we are increasingly involved in policy advice and we expect that this interaction with society will increase. In order to retain our independent positions, this interaction will predominantly take place through the Erasmus Holding and their affiliated companies and through advisory positions. As a result of this interaction, our group will ensure working on themes that are very topical and will have access to new and unique data sources.

Viability

Our group has recently initiated new teaching programmes that are popular amongst students. As a result, we are entitled to a higher share of the budget and manage to attract more talent from which we can source new PhD students. Indeed, through the recent successes in grant applications we can hire new PhD students. Some of these PhD students, but also external PhD students, manage to obtain grants (for example, Marie Curie) and become new staff members. As current senior staff will also continuously submit grant applications, we expect our research group to continue to grow in the near future. At the same time, due to increased cooperation with the Erasmus Holding companies and other external parties (for example, World Bank), extra funds will be available for recruiting ambitious young staff members.

A.2. Econometrics & Management Science

This programme encompasses the research of the Econometric Institute, which will celebrate its 60th anniversary in 2016. The programme has two main research themes which are discussed in detail below. Research covers several areas including applied econometrics, applied statistics, operations research, quantitative logistics, and computer science. The research addresses econometric problems in macroeconomics, logistics, health, marketing and finance.

Econometrics

The research in this theme focuses on data-driven econometric research using advanced statistical methods and techniques. The goal of this research is to push the state of the art in econometrics techniques, to provide economic agents, including policy-makers, firms and investors, with quantitative support to make the best possible decisions. More specifically, the mission of the research group is to develop sound methodological procedures for different key aspects of such decision-making problems, including data collection, econometric model specification, parameter estimation,

model evaluation, and forecasting. The research is typically on the 'cutting edge' in terms of existing econometric techniques. The main fields of application are:

- Macroeconomics;
- Finance;
- Marketing.

In the last decade research in this programme developed new econometric research methods for decision making and forecasting in fields where new types of data became available, for example, in macroeconomics (real-time data & expert forecasts), empirical finance (high frequency data), and marketing (databases of firms & forecasts by managers, internet data). It is expected that the amount of data that will become available for business and research will continue to increase in the near future, e.g. due to the expected 100 billion devices that will be connected to the 'Internet of Things' in 2020 and will provide an almost unimaginable amount of heterogeneous data on a real-time basis. At the same time, the information content per observation will probably decrease. In such an environment new econometric methods and models will be needed to extract signals from the noisy data. Advanced computational techniques will be needed to process the large quantities of data. The econometrics group intends to keep on playing an important role in developing advanced econometric methods and models to prevent a data deluge.

Management Science

The aim of this research theme is to be at the academic forefront of the developments in transportation, logistics and supply chain management in interaction with business intelligence systems, and to make major contributions to both management science and management practice.

Particular topics of interest are:

- service, reverse and green logistics: service logistics concerns all logistical activities after a sale has been completed and concerns provision of spare parts and maintenance. Reverse logistics concerns all logistic activities to recover value from discarded products. Finally green logistics concerns all environmental aspects related to logistics;
- transportation optimisation: the goal is to improve the performance of passenger and cargo transportation systems, in particular Dutch Railways and Port of Rotterdam;
- health care optimisation: here we develop models and methods to increase efficiency in health care institutions and to increase the quality of care;
- Business intelligence systems: This concerns the application of information and communication

technologies and advanced computational methods for improving decision making in business economic domains.

While our research is often motivated by real-world applications, its focus is on the development of new analytic approaches to advance science and society. This usually entails building new mathematical models and/or developing new solution methods or methodologies. In our view, each of the above mentioned topics will remain relevant and challenging in the coming years.

Key publications

- Dollevoet, T.A.B., Huisman, D., Schmidt, M.E. & Schöbel, A. (2012). Delay Management with Rerouting of Passengers, *Transportation Science*, 46(1), 74-89
- Paap, R., Segers, R. & Dijk, D.J.C. van (2009). Do leading indicators lead peaks more than troughs?, *Journal of Business and Economic Statistics*, 27(4), 528-543

Quality

The aim is to perform high-quality applied research at the forefront of developments in the field. To achieve this goal the programme has to undergo periodic stages in which substantial renewals take place with regard to methodology and the field of applications. This idea has also been applied in the recent years. An important focus for the coming years is business analytics.

Relevance to society

The programme intends to tackle societal problems with research of the highest academic quality and to make sure that the results are transformed into practical methods that can be used in organisations. One way to achieve this is by encouraging econometric students to combine writing a master thesis with an internship in a company, in the Netherlands or abroad. During this internship students apply the latest research methods developed by our programme. Examples are research for the Dutch Railways, service logistics research for Fokker, research on donor-patient allocation for the Dutch Transplant Foundation, financial econometric research at banks and insurance companies, and marketing research with large databases for telecom providers. These contacts also enable our group members to stay in touch with the latest developments in industry. At some companies, such as Microsoft, Dutch Railways, ORTEC, several online shops and Fokker Services, the results of our research are implemented in the daily operations of the companies.

Viability

The faculty in this programme consists of a motivated and engaged group of researchers. The programme has sufficient mass to allow interaction and stimulation within the group and to have extensive network collaborations with other researchers within and outside the school. An asset of the institute is the responsibility for the econometrics bachelor and masters programmes: invariably, every year several excellent students can be recruited for the PhD programme, some of whom even continue on tenure track after finishing their dissertation. The bachelor and master programmes also provide a solid base of income for the research staff. However, a potential threat for the programme is the high teaching load for the staff. The past period was characterised by a large amount of PhD students. However, a much lower number of internally financed PhD students is expected in the coming years. This means that over the next few years, there will be stronger incentives for grant applications that involve PhD students. Over the last few years, the number of successful grant applications was limited. The programme aims to be more successful in the future by enhancing the collegial support within the department and targeting staff members with high potential for writing grant proposals. Both national grant opportunities will be pursued such as NWO's Veni, Vidi, and Vici programmes, the Erasmus REI programme and EUR Fellowships, and international grant opportunities such as ERC and Marie Curie. Moreover, opportunities associated with grants for collaborative research projects together with companies will be pursued more. Successes of research in logistics in this respect are encouraging and we will try to replicate them in other areas of investigation.

A.3. Economics

Building on our track record, our goal for the coming years is to further improve our academic standing by a strong dedication to publishing in the top general interest journals in economics. This publication strategy will be based on a clear continued focus on three research areas, allowing us to systematically enhance our existing international visibility and prestige in those fields. The three areas reflect variety in terms of content, but across the programme researchers are familiar with each other's work and they need to confront the same methodological issues, especially regarding empirical research. Consequently, the past years have already shown extensive communication and collaboration across the programme. This synergy will be further exploited in the coming years as follows.

Focus on promising research areas

Research in **Economics of Organisations** revolves around two central themes: the organisation of the decision-making process and organisational aspects of the execution of the work (for example, governance, incentives, recruitment and organisational culture). The theoretical research done by the group on these themes is typically inspired by stylized facts and often has a 'behavioural' flavour, departing from standard neoclassical preferences. The empirical research performed by the group is mostly field-experimental, where researchers collaborate with organisations to examine behavioural responses to organisational innovations.

Research in **Economic Geography & Trade** concentrates on the causes and consequences of the very unequal distribution of economic activity across space. A particular focus point is the way that economic activity in one place affects that in others through trade, and the increasing importance of international supply chains. Research in this area combines theory with empirical investigations.

Research in **Policy Economics** concentrates on the underlying drivers of income and wealth inequality, which increased almost everywhere in the Western world in recent decades. This has fundamental implications for most branches of public policy. The policy economics research group does both economic theory and empirical research. Theoretical work focuses on tax and redistribution policy, monetary policy and trade policy. To identify causal policy effects researchers carry out policy evaluations by analysing natural experiments and conducting field experiments in co-operation with government agencies.

Leveraging international collaboration with other leading groups around the world

This will primarily be achieved by the organisation of conferences and workshops, academic visits, and by inviting researchers from top-schools for short visiting positions. Such events are also instrumental to bringing doctoral talent in personal contact with leading foreign scholars, e.g. as a preparation for a joint paper and/or a position at a leading school abroad. The department allocates a substantial part of its budget to these knowledge exchange activities and it has already seen how this has led to further intensification of our international research network in the past.

Key publications

- Maarten Bosker, Eltjo Buringh, and Jan Luiten van Zanden (2013), From Baghdad to London: unravelling urban development in Europe and the Arab world 800-1800, *Review of Economics and Statistics*, 95(4), pp. 1418-1437.
- Josse Delfgaauw and Robert Dur (2008), Incentives and Workers' Motivation in the Public Sector, *The Economic Journal*, 118(525), pp. 171-191.

Relevance to society

Most of our research has direct and immediate social relevance thanks to applied research on real-world policy problems. As a result the researchers in this programme cooperate extensively with private and public organisations, in a range of ways. Several researchers actively cooperate with policy makers as academic advisors (for example, at CPB Netherlands Bureau for Economic Policy Research, SER, World bank, IMF and several government ministries in the Netherlands and abroad). The number of researchers with experience in conducting field experiments will be increased. Some members of the research group are very active in disseminating research to the general public, via TV interviews, columns, blogs etc.

Viability

Recruitment of new talent

Viability will be enhanced, especially by expanding the Economic Geography group and the Policy Economics group. This will primarily be done by recruiting ambitious young researchers.

Attract more research funding

Finally, one particularly important aim is to attract more external funding. Although members of the Department of Economics have been quite successful in obtaining funding in the past years, this has been mostly based on national funding (through the Netherlands Organisation for Scientific Research, NWO – a good example is the WOTRO-NWO project run by members of our group). European research funding, favouring research with a scope that transcends national borders and interests, offers excellent opportunities to fund research with a strong focus on international relations, integration and economic development. So far this has not been fully exploited by the programme members. With the start of Horizon 2020 in mind, the new framework for R&D of the EU, it will be carefully investigated how we can attract more European funding. In this way, we do not only hope to increase our funding. It will also contribute to our international visibility and prestige.

A.4. Finance and Accounting

This research programme aims to perform high quality research that enhances understanding of the functioning of financial markets, financial institutions and intermediaries, as well as the financial decision making of firms, managers and market participants. We strive for high quality scientific contributions in five areas: Corporate Finance, Corporate Governance, Financial Markets, Financial Accounting and Management Accounting.

The programme's mission is to be one of the leading finance and accounting programmes in Europe, by performing research of high academic quality and at the same time producing results with relevance for a broad audience in the finance and accounting profession.

Key publications

- Skaife, Veenman & Wangerin (2013) Internal control over financial reporting and managerial rent extraction: evidence from the profitability of insider trading. *Journal of Accounting and Economics*, 55(1), 91-110.
- Gryglewicz, S. (2011). A Theory of Corporate Financial Decisions with Liquidity and Solvency Concerns. *Journal of Financial Economics*, 99(2), 365-384.

Quality

As one element of the programme's overall aim, the target is to be consistently ranked among the top European finance and accounting programmes in terms of the number of tier 1 publications. Its performance in this respect has significantly increased during the reporting period, especially when looking at the absolute top journals in Finance and Accounting. Fully in line with Erasmus School of Economics' overall strategy, the programme recognises the importance of research collaborations and international networks as elementary to performing high quality research. Therefore, our researchers often attend high quality international conferences and visit prestigious academic institutions around the world, such as NYU and Stanford University. We organise a high quality seminar series with speakers from leading universities to provide opportunities for collaborations and to learn from the very best. For instance, NYU professor David Yermack is a regular visitor to our department.

Relevance to society

As the other element of the programme's overall aim it considers transfer of actionable knowledge to practitioners essential in its daily work. The recent financial crises and accounting scandals provide ample evidence for the importance of our fields for society, and for the need to make sure that advanced techniques for finance and accounting developed in universities are properly understood in other parts of society. Our programme uses several methods to disseminate its research results to the rest of society. First of all, an important element of creating societal impact is the education of students. With more than 500 students in the Master programme, the knowledge created by the programme makes a very substantial contribution to society as the basis of a curriculum that educates many future business leaders. In addition, the Finance and Accounting group has organised highly focused conferences and round tables that also involve influential practitioners. Furthermore, members of our research programme regularly contribute opinion pieces to Dutch and international newspapers. One aim of these activities is to contribute our expertise to inform the public debate, for example, about executive remuneration, insider trading or the peculiarities of investing in art. Finally, a relatively large number of members has an appointment at a leading financial institution or an auditing firm besides the position at Erasmus School of Economics. This creates excellent opportunities to build collaborative projects and stimulate interactions between fundamental academic research on the one hand and the (financial) industry and regulators on the other.

Viability

Due to the increasing student numbers and a renewed focus on top research and influential publications in high-ranking journals, the staff has been able to grow in size through recruitment on the international job market. At the assistant professor level, this has resulted in newly recruited faculty with PhDs from renowned international schools such as Harvard University and London Business School. Today, the programme involves a young, ambitious, and dynamic group of scholars. Because the recent hires are mostly junior faculty, there is a relatively large proportion of non-tenured faculty. The group aims to increase viability by improving the balance between non-tenured and tenured faculty. The ambition is to increase the quality and number of tenured faculty naturally through the tenure track system, but opportunities to hire externally will be seriously considered.

The programme has gone through a period of strong growth in recent years. The master specialisation Financial Economics and the master programme Accounting, Auditing and Control are the two largest master programmes in the school.

We expect this to continue. The size of the programme is an important source of financing. Additionally, the group intends to remain successful in attracting external funding. Prior success includes the highly prestigious NWO Vici, Vidi and Veni grants (for € 1,500,000, € 800,000 and € 250,000, respectively). These grants indicate that researchers in the Finance and Accounting programme are at the top of their field. In future recruitment efforts the potential of candidates to obtain external funding will play an important role.

A.5. Marketing

Erasmus School of Economics marketing group is currently a leading marketing science group in Europe (top 3 in terms of number of P* publications, according to CWTS reports made for earlier evaluations). Its aim is to become the number 1 marketing science group in Europe in terms of research output and impact on theory and practice and to be one of the top marketing science groups in the world in the next decade. The group conducts research in marketing with a quantitative modelling orientation and addresses important substantive areas such as Global Marketing, Diffusion of Innovations, Marketing Decision-Making and Preference Measurement, Marketing Models, and Healthcare Marketing. Publications are targeted at top journals in the field. A core asset is the recently founded Erasmus Centre for Marketing and Innovation (ECMI), which incorporates many of our research activities and has already established collaboration with leading companies (for example, Nielsen, GM), leading global and local universities (for example, MIT, University of Ghent, IESE), and other disciplines (for example, with Accounting). Leveraging ECMI opens up future funding routes (for example, large EU collaboration grants, individual EU and NWO grants), which makes the intended productivity increase sustainable. Our KPI's are: top-journal productivity, securing more grants, sustainability and relevance of the group.

Key publications

- Stremersch, Stefan, Vardit Landsman and Sriram Venkataraman (2013), The Relationship between DTCA, Drug Requests and Prescriptions: Uncovering Variation in Specialty and Space, *Marketing Science*, 32(1), 89-110.
- Dellaert, Benedict G.C., Bas Donkers and Arthur van Soest (2012), Complexity Effects in Choice Experiment-Based Models, *Journal of Marketing Research*, 49(3), 424-434.

Quality

The programme has a very active and productive research staff consisting of both more established scholars like Stefan Stremersch, Philip Hans Franses, Benedict Dellaert, Bas Donkers, Martijn de Jong, Willem Verbeke, and Dennis Fok, and junior scholars such as Vijay Hariharan (SUNY Buffalo),

Nuno Camacho (Erasmus School of Economics), Vardan Avagyan (Carlos III, Madrid), Yuri Peers (Waikato), Florian Deutzmann (IESE), and Zhiying Jiang (SMU Singapore). They are already contributing or are likely to contribute strongly to the programme's research output in years to come. International top-level visitors affiliated to the programme include Roland Rust (Maryland), Gerry Tellis (University of Southern California), and Josh Eliashberg (Wharton). Furthermore, the department's faculty members have been very successful in obtaining external grants supporting faculty positions, such as EU Marie Curie grants awarded to Sarah Gelper and Isabel Verniers in 2009, to Gui Liberali in 2011, Hyoryung Nam in 2012 and Yuri Peers in 2015. NWO Veni grants were awarded to Martijn de Jong in 2009 and to Aurelie Lemmens in 2009 and an NWO Vidi grant was also awarded to Martijn de Jong in 2013. Large Netspar grants were awarded to Benedict Dellaert and Bas Donkers in 2008 and 2012. In 2012, in a university-wide research competition, the University board awarded € 2 Million for further junior faculty expansion to Dellaert and Stremersch in the context of Marketing-ECMI. Other research grants that support research expenses, beyond faculty, have been obtained from the Royal Netherlands Academy of Arts & Sciences (KNAW), Netherlands Organisation for Scientific Research (NWO), the Marketing Science Institute, Netspar, and Tinbergen talent fund.

Relevance to society

Our research group has clearly improved its visibility in the academic community in the last five years. Our research has demonstrated its societal relevance and impact most specifically in Co-creation of knowledge with the private sector and Knowledge diffusion.

Co-creation of knowledge with the private sector.

Most of our research addresses issues that are of direct relevance for consumers and marketers. Many of our research projects take place in close cooperation with companies in practice. ECMI as an institute within the department was founded for this exact purpose and already works with international companies such as GM and Nielsen. For instance, with General Motors, ECMI is conducting a large study on the marketing effectiveness of new media, such as Facebook, in the Netherlands, US and China. In the area of online marketing and CRM Donkers also works directly with companies. De Jong has worked with several market research firms like GfK, TNS, and SSI. Also ISAM provides a strong interface with practice in the field of sales management. Franses works with direct marketing organisations in the financial industry like Robeco and with charitable organisations on models for prospect and customer selection. Dellaert and Donkers work with industry in the domain of pensions and insurances.

Knowledge diffusion

Several of our faculty regularly teach in executive education programmes and give talks for practitioner audiences, for companies such as Rabobank, Henkel, Telefonica and Opel, among many others. Furthermore, through our regular interaction with practitioners we are constantly fed with ideas about important and relevant research questions and we are also able to share our findings with interested parties and hence create societal impact, even in more remote areas like the legal domain (for example, De Jong has served as an expert witness for the 'Court of Appeal'). Our research is also gaining attention in both national and international mass media such as TV, radio and newspapers.

In 2013 the marketing programme hosted two prestigious international conferences: The triennial invitational choice symposium and the GGSSI (Global Sales Science Institute) conference. In 2014, a novel highly prestigious new joint conference was organised by ECMI in cooperation with the European Marketing Association (EMAC) and the American Marketing Association (AMA), for a joint audience of leading academics and leading practitioners. It is the first symposium in a new joint series between EMAC and AMA, the first co-operation between both associations. The second edition will be organized at Wharton in 2016, and the third at Insead in 2018.

Viability and ambitions

In line with the ambitions of Erasmus School of Economics, the marketing programme now prepares itself to achieve its next main goal in the oncoming decade. This is to become the number 1 marketing science group in Europe and one of the top Marketing Science groups in the world. In terms of Key Performance Indicators (KPIs) we define top in terms of number of top-level publications (medium-term: 5-10 years perspective), grants and sustainability in terms of stability of our faculty base (short-term: 2-5 year perspective). We also see citations and impact as an important outcome and the department is continuously increasing its citation count, but without losing focus on top-level publication outlets and credibility. The culture we set is one of going for high impact big bets in research programmes, rather than moderate advances to marketing science.

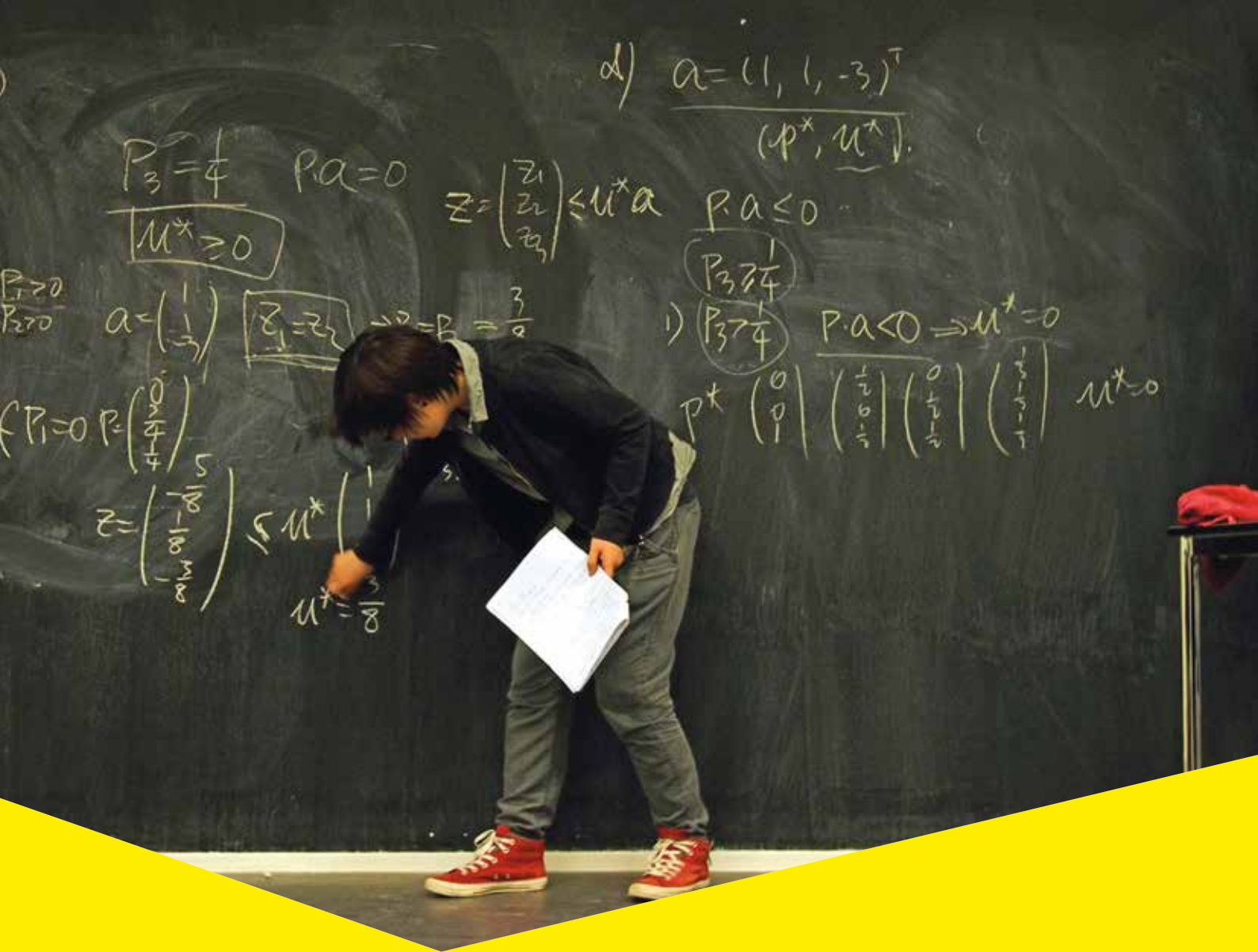
We consider the strong and relatively young group of senior researchers in combination with a very talented junior faculty base to be one of the current strengths of the department. The department offers an exceptional environment for young international talent to nurture and develop their research skills in a strong academic community. Funding from the Netherlands Organisation for Scientific Research and from European Programmes supports such appointments. Opportunities lie in further leveraging the department's skills

and talent-base for greater impact at an international level, while among the threats is the anticipated increasing European competition for talented young academic researchers. A weakness the department will need to overcome is its limited scale.

Based on this analysis, the group wishes to achieve its main goal in the following ways:

- sustain the recent increase in junior faculty base, while remaining selective in tenure decisions;
- retention of leading scholars in Marketing Science on chaired positions;
- build one globally well-renowned research centre (the Erasmus Centre for Marketing of Innovation) to further build impact and relevance worldwide;
- expand external funding nationally and at EU level.

In conclusion, although we realize that entering the top-league of marketing science groups worldwide is challenging as competition is tough, we are confident that in the past years we have laid a solid foundation for making this next step. With the strong quality of the current team, excellent new hires, and the growing impact and funding through our institute ECMI, we are now keen to work towards achieving this next step on the road towards excellence.



Appendix B

Tinbergen Institute (TI)

B. Tinbergen Institute (TI)

B.1. Introduction

Tinbergen Institute (TI) was founded in 1987 by Erasmus University Rotterdam (EUR), VU University Amsterdam (VU) and the University of Amsterdam (UvA) to jointly offer graduate training to junior faculty pursuing the completion of a dissertation at the Economics Faculties of these three universities. TI membership criteria were defined, based on publication track record, and only TI fellows were allowed to teach in the joint graduate training programme. Since the start of the institute each participating university has annually allocated funding for the organisation of TI research seminars, TI workshops, etc. Since 1996 TI has been accredited by the Royal Netherlands Academy of Arts & Sciences (KNAW), with periodic renewals in 2001, 2006 and 2011, based on an evaluation by a distinct International Peer Review Committee (IPRC)¹². Today TI is one of Europe's leading institutes in economics, econometrics and finance. It has over 150 research fellows, organised in eight TI research programmes, and nearly 600 alumni from its graduate school. TI operates from two locations: one in Rotterdam and one in Amsterdam.

The mission of TI is to offer an MPhil programme and PhD training in economics, econometrics and finance comparable with the best graduate schools in these fields, and to facilitate and stimulate fundamental and applied economic research that meets the highest international standards.

TI is mainly financed by its three funding Faculties. In addition, in 2011 TI obtained a Graduate Programme block grant from the NWO, the Netherlands Organisation for Scientific Research.

B.2. Governance structure

TI's activities are fully dedicated to enhancing research and providing graduate training at the three participating faculties, but TI has been set up with sufficient independence to enable it to define a joint strategy that transcends the immediate priorities of the individual founding faculties. First of all, TI is governed by a board consisting of five members. Three members have an appointment at one of the faculties participating in TI. Typically these three individuals are the research deans at their respective faculties. The two other members are external members; they hold high positions outside academia, but are familiar with the academic world and hold a PhD. The board members are appointed by the deans of the faculties. Responsibility for the day-to-day operations of TI lies with the director (0.5 fte) and the director of graduate studies (DGS, 0.5 fte), who are both accountable to the Board (and hence only indirectly to the deans). TI also has its own Examination Board, Educational Board and Admission Board. Furthermore, it has a Research

Council comprising of the leaders of the eight TI research programmes, which advises the director on research matters and is also co-responsible for the quality assurance of the MPhil programme and its respective field courses. For administrative matters, the EUR performs the role of legal representative ('penvoerder') of TI. As such, TI is an integral part of the EUR's mandating structure and planning and control cycle.

B.3. TI as a graduate school

TI aims to offer graduate training in economics, econometrics and finance that is comparable with the best graduate schools in these fields. To achieve this TI offers a two-year course programme as the recommended start of a five-year doctoral training. The two-year course programme is recognised as a distinct research master or MPhil programme that is accredited as such by the Dutch Flemish Accreditation Organisation (NVAO). The typical MPhil graduate will subsequently receive a 3-year appointment at one of the participating faculties as a PhD candidate. In the Netherlands such a PhD candidate is a university employee with a temporary junior researcher appointment. Alternatively, doctoral candidates receive a 4-year appointment after a regular MSc degree. In that case they still take a selection of courses from TI's two-year MPhil programme, mostly in their first year, in preparation of their dissertation project. Below we will emphasize TI's contribution to graduate training through its MPhil programme. Details of the PhD phase are provided in the main text of the self-assessment per participating faculty.

Selection and admission procedure

Recruitment of good students in a competitive market is a key task for any graduate school in economics. The TI programme enjoys interest from high quality students from across the globe. Its main European competitors are LSE, Oxford, Cambridge, Tilburg, Stockholm, UPF and Zurich. Admission decisions are based on information commonly used in international PhD admissions: undergraduate performance; GRE scores; standardised tests of English proficiency; CVs; reference letters; and a statement of purpose. Students should be strongly motivated to pursue a PhD, preferably at Tinbergen Institute. The Director of Graduate Studies, who is responsible for the selection and admission process, also collects information by placing phone calls with candidates. All application files are thoroughly assessed and ranked by the members of the Admission Committee. The Admission

¹² This is no longer the case. Under the new assessment rules in the Netherlands the re-evaluation of the research school is incorporated in the disciplinary assessment of economics.

Board, with representatives from the three Faculties, decides on the student selection and the awarding of scholarships. These scholarships, awarded by the faculties, are a key instrument in attracting good students. The outcome of the process is a rigorously selected class of students that can handle the PhD-level research training that the MPhil programme seeks to offer. The admission procedure is regularly reviewed by comparing the initial ranking of applicants with their actual performance in the programme. The results of the reviews have been used to further fine-tune the selection procedure. Over the last six years, the number of applicants has risen from 115 in 2008 to 233 in 2014. Also, their quality has increased, as is demonstrated by their test scores. Student intake fluctuated between 37 in 2010 and 27 in 2014. (Appendix E.1). Most students who perform well in the MPhil programme find a supervisor (usually a TI fellow) and continue in a PhD track in Tinbergen Institute.

Programme content and structure

Diagram 1 (online, Appendix III)¹³ provides a schematic overview of the MPhil programme, and its place in TI's graduate programme. In the first year of the MPhil programme students have to complete 56 ECTS of core courses, spread across Microeconomics (16 ECTS), Macroeconomics (16 ECTS), and (Advanced) Econometrics (20 ECTS), two field courses (6 ECTS), a programming course (1 ECTS) and the course academic writing and MPhil seminar series (1 ECTS). This seminar series brings students in touch with research conducted by TI fellows. The academic year is split in five periods of eight weeks, with seven weeks of lectures, frequent (graded) homework assignments, weekly tutorials to review homework, and sit-in written exams in the last week of each period. Students have access to the TI's wide array of research seminars, workshops and conferences. The Director of Graduate Studies (DGS) meets with all students individually at least three times during the first year to evaluate their progress. TI regularly reviews the curriculum in order to adjust to recent developments in the discipline. Since 2012, for example, adjustments in the macroeconomics and in the microeconomics core sequences have been implemented.

The second year of the MPhil programme allows students to acquire the necessary specialised training in their fields of interest. Over the past years, TI has aligned these fields more closely with the eight research groups within the Institute. Students have to complete 30 ECTS of specialised coursework, taking at least four courses in their major field. TI also offers students the opportunity to attend the annual TI Lectures series, which features top international academics (online, Appendix V.7).

MPhil thesis and matching with supervisors

Students are required to submit a short MPhil thesis proposal to the DGS by December of the second year. This includes a proposal for a match with a TI fellow who can act as supervisor. The students also present their plans for the MPhil thesis, and a possible continuation in a PhD employment position, in the two-day MPhil Thesis Workshop halfway through the second year. When necessary, the DGS assists students and fellows in establishing matches. Once matched to a TI fellow/supervisor, students work on their first major research paper, the 30 ECTS MPhil thesis. The MPhil thesis should have the format and size of a research paper that can be submitted to an international, peer-reviewed journal in economics and be publicly defended at TI. Heeding the advice of the midterm review committee, to help supervisors and students to develop writing skills at an early stage, TI introduced a mandatory writing course in the first year of the programme and the obligation to write a field paper at the end of the first year. TI has also developed a module about professional behaviour and academic integrity as a compulsory part of graduate training. Many of the students who defend their MPhil theses proceed towards a PhD and are appointed at one of the Faculties to work towards their dissertation under the supervision of a TI fellow.

Support at the PhD stage

Following the recommendations of the two most recent IPRCs, TI has prioritised job market training for all TI-affiliated PhD candidates. Since 2013, TI has a placement director who has stepped up TI's efforts in the realm of job market preparation. TI now offers a number of services: a series of workshops, mock interview sessions that also actively involve TI fellows, and an alumni event to assist PhD candidates in successfully preparing for the academic job market. TI has made travel budgets available to attend job market meetings in the United States and Europe. TI sees a real impact of its job market training efforts both in the quality of placements, increased participation from PhD candidates and interest from (academic) employers, with students gaining positions at institutions like Rutgers University, UCLA, LSE, UPF, and INSEAD. TI remains strongly convinced about the importance of guiding its PhD candidates to the job market. To further strengthen the effectiveness of the job market training, we are currently identifying ways to inform students and their advisors about the demands of the job market from day one, allowing them to start acting with that market in mind much earlier. Good placement of PhD candidates is not only beneficial for the students but also reflects on TI and the three Faculties: a good placement record will attract more and better students to the TI MPhil programme.

¹³ Online appendices are available in the QANU portal

Duration and success rates

The average duration until the MPhil diploma is just over 24 months for the cohorts 2008 - 2012. The success rate for these cohorts is approximately 86%. Dropping out of the programme occurs for several reasons and in most cases is due to unsatisfactory performance. Over 90% of the students who completed TI's MPhil programme in the cohorts 2008 - 2012, continue onto a PhD track, generally at one of the three faculties participating in TI (Appendix E.2.1). Of all the MPhil students that started their PhD between 2007 and 2010, 48% has defended their PhD thesis within four years. Only a few (6%) of this group manage to defend their PhD thesis within three years. (Appendix E.2.3). This is hardly surprising and seems to be a more general phenomenon, since waiting for the results of the reading committee and planning a date for the defence is a lengthy process that easily takes more than four months. Another reason is that TI students find a job before they defend their PhD thesis. This may actually be a sign that many of our students are attractive for employers. TI keeps close track of career developments of its students. The distribution of all TI PhD candidates between 2011 and 2015 (until Feb. 1), shows that 68% found their first position in academia; 19% in government and 13% in the private sector or industry (Appendix E.3.1) TI (MPhil) alumni feel very committed to TI and TI goes to great lengths to involve alumni through the website, magazine, social media and job market preparation.

Quality assurance

Quality assurance takes on many forms. TI has been an accredited research school since 1996, with periodic renewals by the KNAW in 2001, 2006 and 2011. The most recent IPRC, led by Richard Blundell (2010), concluded that 'the research masters and graduate programmes are of the very highest quality'. The 2015 NVAO accreditation committee complimented TI with its ambitious objectives that were realistic thanks to the selection of students, the high quality of its lecturers and the coherence of its educational programme. As part of the accreditation processes, TI is subject to the rules and regulations of the EUR, including a midterm review of its MPhil programme.

In addition to these external assurance processes, there is an internal one that is made up of various interlocking parts. The DGS, a full professor and fellow of TI, has final responsibility for academic content and level of the MPhil programme. Core course coordinators and field coordinators help in stream lining course content. For day-to-day operations, he is assisted by TI staff, including a programme manager, a senior policy advisor education, and an admissions officer. The TI Examination Board supervises all aspects of the quality

assurance of the examinations. TI also evaluates all individual courses, exams and lecturers. The outcomes are discussed by the Educational Board, as well as the outcomes of the annual student review of the programme. The DGS, who acts as an adviser to this Board, is tasked to address any concerns that may arise. Finally, TI organised an elaborate survey (June 2013) among MPhil graduates, with a response rate of 66%. A vast majority (88%) of the respondents indicated that they and their careers benefitted greatly from the solid educational background acquired at TI and they valued the fact that TI's research masters' programme offers a solid first year with mandatory coursework on the core subjects in economics.

B.4. TI as a research institute

Across the three founding faculties TI facilitates and stimulates fundamental and applied economic research that meets the highest international standards. The TI Board admits researchers from the three participating faculties as TI research fellows, based on the rules for publication performance as outlined in the TI Fellowship Charter (online, Appendix V.8). In 2012, TI established new rules and requirements concerning eligibility for the various TI fellowships. The growing importance of the international job market in the faculties' hiring process warrants further emphasis on research impact and quality. Therefore, TI adopted the Article Influence Score (AIS) to measure journal impact, and evaluated researchers on the basis of the impact of at most five publications over a five-year period. Fellows are periodically evaluated for reappointment, with current appointments ending on December 31, 2016. (online, Appendices V.8 and V.9).

TI fellows, their research interests, publications and accomplishments together with all research-related activities financed by TI are made visible through the TI website. Each fellow belongs to one of the eight research groups at TI. Each research group in each city has one, sometimes two, research seminar series where external speakers present their work. Budgets for these seminars and for conferences, workshops, and visits have been allocated by the faculties to TI. In 2014, some 25 seminar series were funded and organised, and a total of over 375 seminars, workshops and conferences took place. The total budget for these activities is about € 207.000. TI also published 157 discussion papers, and 29 PhD theses in 2014. Seminars and workshops have been instrumental in forging strong ties between researchers with similar interests who are affiliated at different universities. They create a critical mass and consequent level of specialisation which would have been impossible to attain for any of the participating faculties on its own. (Appendix E.4 and online, Appendices V.1, V.2, V.3, V.4). As in the previous period 2006 - 2010, TI research fellows published on average three articles per year in the top five journals (American Economic Review, Econometrica, Journal

of Political Economy, Quarterly Journal of Economics and Review of Economic Studies). This is an important indication of the quality of TI research fellows. A total of 134 papers in high quality journals, between 2012 and 2014 (based on journals with an Article Influence Score greater than 2.0 on the TI Journal List) also demonstrates the research quality and productivity of TI fellows. (Appendix E.4)

B.5. Strategic developments

At the start of 2011, one of the first steps of the new director was to formulate a strategy for the five years to come. The strategy he formulated used the analysis and recommendations presented by the so-called International Peer Review Committee (IPRC) led by professor Blundell. The Blundell report was an essential part of the previous application for re-accreditation as a research school. Below we summarise the recommendations from the Blundell committee together with action taken at TI in response to it.

1. "All students pursuing a PhD at TI [should] successfully complete the MPhil. Think of ways of making use of 'local' MSc courses in fulfilling the requirements of TI MPhil. Those PhD candidates who have a Master of Science are recommended to complete the full MPhil requirements".

Together with the three Faculties, TI has developed a so-called Research Qualification: PhD candidates on a 4-year contract are now recommended to take at least 40 ECTS of course work at TI. Those who successfully complete this course work are encouraged to use the TI job market preparation programme. Since the 2012 - 2013 academic year, 5 students have completed the programme. (Appendix E.2.2.1). Another programme, which is still in infancy, is tailor-made for students of MSc Econometrics programmes at one of the three Faculties. They are offered the possibility to join the TI MPhil programme after approximately 6 months (March). Completed MSc Econometrics coursework counts towards the TI MPhil degree, either as electives or as a core course in case of redundancy. This allows such students to discover their appetite for research and research-oriented training during the MSc year and finish the TI programme within two years upon starting the MSc, including a regular MPhil thesis. Both possibilities have been received enthusiastically by TI fellows.

2. "Organise ways [such] that the link with TI does not weaken once students have moved from the MPhil programme to their PhD studies (for example, organise a regular research day, TI should look after job-market placements of all TI graduates)".

The role of TI in the second part of the 2+3 PhD programme varies from Faculty to Faculty and is a recurrent theme in meetings with the deans. For example, at the EUR, TI

has been asked to stay abreast of student progress and wellbeing also after completion of their coursework, while it is a Faculty matter in Amsterdam. An area in which TI's role is uncontested is job market training, see above.

3. "Improve attractiveness to teach at TI".

TI has never had problems finding fellows to teach in its programme in general. What has been problematic is to convince fellows from especially EUR to teach. This is probably due to, on the one hand, the perceived slim chances to find students willing to take up PhD research in Rotterdam and, on the other, the ease with which PhD candidates can be recruited from local MSc programmes. Vice versa, one of the motives that MPhil students report for not starting their PhDs in Rotterdam is their lack of knowledge as to what research Rotterdam-based fellows do. To break this vicious circle, the DGS has started a policy of having each course run by two fellows, one from each city. We have also improved information provision as to the research interests of all fellows, for example, through the TI website and a research seminar in which groups of fellows present themselves. Recently, there has been an uptick in the number of students starting at the EUR, possibly thanks to these measures.

4. "Make sure that all fellows feel that they belong to TI. Foster brand name and common goal".

Due to the interuniversity nature of TI, making fellows feel that they belong to TI is both important and challenging. The graduate training programme is felt as a programme shared by three universities and is the best-known carrier of the TI brand. Research-wise, there are strong ties between the two Amsterdam-based universities in areas such as labour economics, econometrics and industrial organisation as testified by well-attended joint TI seminars. The director of TI has an individual meeting with newly appointed (candidate) fellows to learn their research interests, point them to any TI fellow with related interests, and explain the purpose of TI and the funding possibilities it offers. Conscious attempts are made to involve members of the TI community (fellows, students, alumni) in for example, job market preparation, TI-wide group research days, and summer schools initiated by the TI office. A new, actively managed website tries to reflect as well as possible the many accomplishments of TI fellows and the breadth of activities organised by TI.

5. "TI should generate independent financial resources".

During the period 2008 - 2013, the main source of non-university funding has been the Duisenberg school of finance (DSF). Former TI Board members were instrumental in the foundation of DSF. During that period, nearly € 2.9M has been obtained for extra courses in finance,

more MPhil scholarships and more PhD positions at the faculties. However, due to the economic crisis DSF was no longer able to pay the originally agreed amounts of money and hence TI decided to scale down the finance track in number of separate courses and student inflow and to put the partnership on a backburner. Although TI has been very happy with the amount received from DSF, this also indicates that external money is less stable than funding from the universities. In 2011, TI obtained a grant through the NWO graduate programme of € 800.000 to finance PhD positions for a period of four years. An alternative source that is currently being developed are summer schools directed towards graduate students and young professionals.

B.6. Conclusion

TI's main ambition for the coming years is to improve its position amongst the leading institutes in economics in Europe and to be amongst the top 25 schools in the world. The network of TI fellows and the TI graduate programme have developed into a strong brand, allowing continuous improvement of the quality of students that are admitted. This will be leveraged by adjustments of the graduate programme and strengthening of the job market preparation, which will both improve the placements of TI alumni. This can be further reinforced by leveraging the TI brand in the development of summer schools in TI's areas of strength. All of this requires joint effort and the involvement of the whole TI community – students, fellows, alumni, staff, board members and deans. A key challenge for TI management will therefore be to ensure that all stakeholders feel that they really are part of TI.



Appendix C

Erasmus Research Institute of Management (ERIM)

C. Erasmus Research Institute of Management (ERIM)

C.1. Introduction

Erasmus Research Institute of Management (ERIM), founded in 1998, is a collaboration between Rotterdam School of Management (RSM) and Erasmus School of Economics (ESE). ERIM brings together qualifying researchers in business and management from both schools, offers services to leverage their combined performance and provides graduate education in management. More specifically, ERIM's main goals are:

1. To be a high quality institute which leverages the high visibility and strong reputation of research in management at Erasmus University;
2. To offer high quality doctoral education;
3. To support recruitment, development and retention of talent in management research at Erasmus University in all career stages.

Note that, like Tinbergen Institute, ERIM does not employ its own faculty. Faculty from RSM and Erasmus School of Economics participate in ERIM based on membership criteria. ERIM distinguishes five areas of research in management: Business Processes, Logistics & Information systems (LIS), Organisation (ORG), Marketing (MKT), Finance & Accounting (F&A) and Strategy & Entrepreneurship (S&E). ERIM was accredited as a 'research school' by the Royal Netherlands Academy for Arts and Sciences (KNAW) for the first time in 1999 and was re-accredited in 2003 and 2010. Its research master programme was first accredited by the Dutch Flemish Accreditation Organisation (NVAO) in 2003 and has been re-accredited in 2009 and 2015.

C.2. Governance structure

ERIM's Scientific Director (currently Prof. Marno Verbeek) is the head of the institute. As such he chairs the ERIM Management Team, which further consists of the Associate Director, the Director of Doctoral Education and the Executive Director. Faculty from both participating schools are represented in the Management Team. ERIM's activities are supported by the ERIM Office. ERIM's Supervisory Board includes the deans of the two participating schools, and three professors from foreign universities. Erasmus School of Economics' dean chairs ERIM's supervisory board.

ERIM's most senior members (called fellows) take responsibility for the day-to-day management of ERIM's research programmes. One fellow from each programme participates in the Programme Advisory Committee (PAC), which is the primary internal advisory body to ERIM's management team. The PAC meets with the ERIM management team five times per year.

The curriculum of ERIM's doctoral programme is differentiated along the lines of its research programmes, called tracks in the context of education. Each track is coordinated by an ERIM member. Track coordinators meet regularly with members of the ERIM Management Team, especially with the Director of Doctoral Education, to discuss the state of affairs, challenges and opportunities for improvement in the doctoral programme. The doctoral students are represented by the Doctoral Advisory Committee.

C.3. ERIM as a graduate school

ERIM offers a doctoral programme, taught by ERIM members, with the primary aim of preparing for an academic career. An important goal is to enable its doctoral alumni to obtain an excellent starting position on the international academic job market.

The 5-year doctoral programme consists of a 2-year research master programme, which is concluded with a distinct diploma, and subsequently 3 years for a dissertation project to obtain the PhD. The first year of the research master curriculum contains courses on research methodology and research techniques, management theory and specific courses per track. The second year consists of advanced methodology courses and advanced specialisation courses. In the second year most courses are electives, offering the students ample opportunity to specialise according to their personal interests. The Research Master receives separate accreditation by the NVAO, based on an assessment every six years.

Candidates can enter ERIM's doctoral programme at three points in time; in the first year on the basis of a bachelor diploma, in the second year on the basis of a master degree, and in the third year on the basis of a relevant Research Master diploma. Students entering in the second year typically will receive a 4-year contract as a junior researcher (in Dutch: assistant-in-opleiding or AiO) and will take a selection of field and methodology courses of at least 40 ECTS depending on their specialisation. Alternatively, they can complete the full second year of the MPhil as a research master student, before starting their dissertation project based on a 3-year AiO contract. By explicitly accommodating the different entry points, both for students with an undergraduate background in management or economics and for those without one, the ERIM doctoral programme offers a variety of routes towards a PhD. All these routes are based on a common didactical model and a shared set of learning outcomes that constitute the knowledge and skill-set required on the international academic labour market. By taking into account the precise entry level of the individual student, all trajectories allow a gradual but systematic transition from student to scholar leading to a

comparable exit level, regardless of the precise start in the doctoral programme.

In recent years ERIM has implemented several measures to further enhance the development of independence and academic creativity in its students. One of these measures is the substantial expansion in the number of courses offered in the ERIM doctoral programme, including the introduction of an annual ERIM Summer School. ERIM thus provides much more flexibility for students to choose courses in accordance with their preferred research direction.

The vision and structure behind the ERIM doctoral programme, and its positive effects, have generated substantial praise and recognition from external evaluation bodies. In 2009 an international accreditation committee from the KNAW reached a very positive verdict about the research master and praised ERIM's "vision on the direction and required structure of the programme" and its ability to "effectively accommodate various types of talented students with different academic backgrounds". It confirmed that "ERIM has developed a long-term perspective on and a highly efficient approach to graduate education in the major fields of management research" and concluded that, on the ERIM doctoral programme, "the quality management approach, the set-up of the curriculum, the supervisory system that is designed and implemented and the scientists and supervisors involved are just what they should be".

In 2009, a committee set up by NWO selected the ERIM doctoral programme as one in a first set of only nine graduate programmes in the Netherlands, across all academic disciplines. This committee also appreciated the opportunities for students to develop according to their specific background, interests and talents and called the ERIM doctoral programme "the strongest representative of education in management, also internationally, which belongs to the top in Europe". Besides the normal progress meeting with their supervisors, ERIM doctoral students also regularly meet with the Director of Doctoral Education to discuss their progress. ERIM offers several specific services for doctoral students, including the publication of their dissertation in the high quality ERIM PhD Series. Since 2000, more than 200 dissertations have been published in this series.

C.4. ERIM as a research institute

ERIM brings together one of the largest groups of researchers in business and management in Europe. It has around 140 full members including fellows, and 80 associate members. The associate members are recent recruits who have a grace period (of maximum five years) to meet the obligations of full membership. Membership of ERIM is based on publications,

primarily in selected journals on the ERIM Journal List. That list distinguishes between primary (P) and secondary (S) journals. Within the primary set (110 journals) it further distinguishes absolute top academic journals (so-called 'P-star' journals; 35 in total) and top journals for practitioners (called M-star; 4 journals) besides the regular primary journals (P; 71 journals). Membership criteria emphasise publications in the journals on the primary list and especially the star-journals. They thus clearly contribute to an increase in quality of academic output regarding management research at Erasmus University. Over the years the number of publications in the better management journals, especially in the top journals, has steadily increased: 26% of Erasmus University's publications in the domain of business and management are in the top decile of most impactful journals (according to the Financial Times ranking). This level of performance was also recognised by the mid-term committee, which assessed ERIM in 2013:

"This impressive achievement may be attributed to a well-designed and well-managed strategy promoting both productivity and quality of research, which includes the transparent membership and voucher system".

ERIM does not only set publication targets but also offers a variety of services to its members to increase their productivity. These services cover a range of support, e.g. for events and international collaboration, for data acquisition and other resources, and for dissemination of results. It also offers specific support for ERIM doctoral students (see section 4). Among the research facilities that ERIM members can enjoy is the world-class Erasmus Behavioural Lab: different types of state-of-the-art labs for behavioural research. Other facilities are the Survey Centre and the Data Services Centre.

ERIM actively encourages communication and collaboration across the participating schools and across its research programmes. This includes strong support of international collaboration. For instance, over 200 ERIM seminars are scheduled annually where international speakers share insights from their current research, based on an invitation from an ERIM member. ERIM also organises an annual Management Lecture, featuring a prominent academic from abroad. Working papers are published in the electronic ERIM Report Series, facilitating easy and early access to research results across campus and beyond (via SSRN).

Since its start ERIM has been an active innovator of services offered to its members. This has significantly leveraged the appeal of being a member of ERIM. In fact, ERIM has in several ways pioneered services now offered to most researchers at Erasmus University. One example is the way it initiated dedicated support for its members to obtain research grants in 2007. Since then ERIM researchers have obtained millions

in prestigious research grants, a sharp increase compared to the preceding years. Successes range from prestigious grants for individual scientific excellence such as ERC grants and VICI grants, and Marie Curie fellowships for tenure trackers, to EU-grants for very large international collaborative projects coordinated by ERIM researchers. Over the years the two participating schools have embraced and adopted ERIM's innovative practice in this area and the function of grant support is currently fully incorporated in the dean's offices of both participating schools. Most other schools on campus, e.g. Erasmus School of Law and the School of Social Sciences, have also expanded the support to obtain grants accordingly. Likewise, ERIM's benchmarking based on a systematic global comparison of citation impact, its approach to create and support development of centres to improve visibility of its research and its policies for scientific integrity have been adopted across the whole university. External committees have consistently assessed ERIM's level of support to its members as a clear strength. The mid-term committee that analysed ERIM's performance in 2013 confirmed this:

"The committee was impressed by the excellent level of support provided by the ERIM office to the programmes, and to individual researchers. This not only includes the support programmes, but also the individually tailored advice and support. The committee shares the appreciation by the researchers for the lean, effective and efficient structure of the office".

C.5. Strategic developments

The priorities for the period 2011 - 2015 were:

1) Further strengthen academic performance

ERIM continues to invest in a research environment that attracts, develops and retains quality researchers. The ERIM Journal List and the ERIM Membership Charter have been updated, in 2011 and 2012 respectively, effectuating stricter criteria to become and remain an ERIM member. The key change in the new Membership Charter was the increased focus on publication quality (as reflected in a journal's citation impact). For example, one route to full membership that now exists is to have two publications in the very top (star) outlets within a five year window. The mid-term committee (2013) supported this emphasis on the impact of publications.

The mid-term committee also encouraged ERIM to achieve more differentiation in the types of ERIM membership, including more recognition for the very high performing members. According to the committee, catering for the specific potential of these very high performing members may contribute to increased impact and visibility of the ERIM

output. ERIM is therefore considering the implementation of specific provisions that will encourage established members, who have provided ample evidence of meeting the membership criteria, to engage in ambitious (and high risk) initiatives that could lead to extraordinary results. This is also in line with the development of specific policies for senior faculty currently occurring in the participating schools.

As another initiative to increase research quality ERIM started an extensive programme to improve research integrity and professionalism, including a symposium, special courses, research methodology groups and expansion of facilities for data storage and management. ERIM's recommendations and actions have subsequently been adopted across campus, or are being adopted.

2) Further increase the quality and international appeal of the doctoral programme

To improve the international reputation of the ERIM Doctoral Programme, its communication and marketing activities have been professionalised, e.g. optimising its web presence and visibility through social media. This resulted in substantial increases in the number of international applicants. Moreover, placement of doctoral graduates at leading schools has become a key priority, even though improvements in this respect come at a relatively slow pace.

To leverage prestigious placements of PhD alumni, the mid-term committee recommended that more opportunities should be developed for doctoral students to spend some time at leading schools abroad, especially in the USA. Such visits would allow them to enjoy rigorous courses and research seminars there as part of their doctoral training. This could provide significant leverage to improved placement of PhD alumni, which in turn will attract better students to ERIM's doctoral programme. Better exploitation of existing relationships between ERIM's members and faculty at those top schools could help to achieve this.

3) Invest in capabilities to broaden and increase the research funding base

Like all researchers, those at ERIM need to accommodate the steady decrease in basic funding from the government. To still grow as a research institute and improve the quality of its facilities ERIM needs to obtain more funds from other sources. ERIM has invested substantially in professionalising the support to obtain research grants and in the past years ERIM researchers have significantly increased this type of revenue, as already mentioned above. In each one of the participating schools experienced staff members are now available to stimulate and support scholars to pursue grants from NWO,

the ERC and other funding organisations. ERIM members receive a funding newsletter and since 2012 a Funding Advisory Board exists, consisting of faculty with significant experience in obtaining grants. This Funding Advisory Board provides feedback to applicants from a multidisciplinary perspective, resembling the evaluation process in the actual competitions.

Compared to this improvement, revenue from the private sector, e.g. for contract research is still relatively low. In principle this type of income could be substantial for research in management. Development of the relationship network with companies based on stronger ties to ERIM research will very likely contribute to an increase in contract research. This type of development is strongly related to the next challenge.

4) Strengthen visibility and reputation in management practice and society at large

Several important measures have been taken to achieve this. To improve the impact of our scholarly work upon society and business, the new membership charter stimulates publications in managerial outlets (the M* journals), like Harvard Business Review, by attaching special rewards to them (for tenured faculty).

Moreover, ERIM will invest in the development of Centres around a few important research themes, with clear potential to draw strong interest outside academia. To drive this development a Director of Centre Development was appointed in 2013. One example of a centre (founded in 2014) is the Centre of Excellence in Public Safety Management (CESAM), based on a large EU-funded research project. The project was coordinated by an ERIM researcher, involved 15 partner institutions and 22 police units in 10 European countries. It thus created significant international visibility for ERIM expertise in the security sector, which due to international developments can be considered a 'growth market' for management expertise. The researchers involved in this centre subsequently obtained a contract to assess the blueprint for the creation of the Dutch National Police, providing a clear example of how ERIM's expertise can have a direct impact in society. Based on their strong link to the practitioners through CESAM they also obtained a significant new grant from the EU. Likewise, at the ERIM Centre for Future Energy Business researchers explore the dimensions of tomorrow's energy market, together with industry representatives and energy policy makers. ERIM aims to achieve similar effects with centres in selected other domains, e.g. logistics, behavioural finance and health management analytics.

C.6. Conclusion

From its first accreditation in 1999, ERIM has risen to a top three position in Europe in terms of research productivity, especially in terms of publications in the leading journals. The institute has matured over the past 15 years, and has a very solid basis: it is currently among the top 25 research institutes in management in the world. It finds itself at a turning point, where it needs to engage the challenges of a new stage of development: continuing the strong focus on academic excellence, while devoting more attention to its wider societal impact and opportunities to generate additional revenue. Hence, the key challenge for the years to come will be to find the right balance between the strong push on excellent research and academic output and the simultaneous pull on (senior) faculty to engage in activities that generate visibility and research funding.

In the coming years ERIM will continue to develop along the lines of the priorities discussed above, realising that it takes time to harvest the rewards from policy measures like the updated ERIM Membership Charter, the improved quality of students entering the doctoral programme, the investments in its support services and the development of the centres. As in previous years, the foundation of its development will remain its devotion to the pursuit of academic excellence.

Importantly, the strategy towards increased academic excellence requires great selectivity in recruitment, promotion and tenure decisions by the participating schools. After all, the quality of people is of fundamental importance to achieving the strategic objectives. This requires continuous attention by the participating schools. Simultaneously, ERIM will continue to conceive, execute and improve rules and services that will stimulate research excellence of faculty and training of doctoral students at both schools.

Selected output indicators

		Quality Domains	
		Research quality	Relevance to Society
Assessment Dimensions	Demonstrable products	1. Research products for peers <ul style="list-style-type: none"> • Scientific articles top & other) • Scientific books and book chapters (top & other) • Dissertations • Conference papers (Pages: 10 - 11) 	4. Research products for societal target groups <ul style="list-style-type: none"> • Knowledge transfer through spin-off companies Page: 15)
	Demonstrable use of products	2. Use of research products by peers <ul style="list-style-type: none"> • Citations / citation analysis (Pages: 19 - 20) 	5. Use of research products by societal groups <ul style="list-style-type: none"> • Projects in cooperation with societal groups (public and private organizations) (Pages: 13 – 14)
	Demonstrable marks of recognition	3. Marks of recognition from peers <ul style="list-style-type: none"> • Research grants (National / European) • Membership of scientific organizations. (Page: 12 & 14) 	6. Marks of recognition by societal groups <ul style="list-style-type: none"> • Membership of civil society advisory bodies (Page: 14)

List of abbreviations

AiO	Junior researcher (in Dutch: assistent-in-opleiding)	ISAM	Institute for Sales and Account Management
AIS	Article Influence Score	KNAW	Royal Netherlands Academy of Arts and Sciences (in Dutch: Koninklijke Nederlandse Akademie van Wetenschappen)
AMA	American Marketing Association	KPI	Key Performance Indicator
ARWU	Academic Ranking of World Universities	LSE	London School of Economics
CPB	Netherlands Bureau for Economic Policy Analysis (in Dutch: Centraal Planbureau)	MIT	Massachusetts Institute of Technology
CRM	Customer Relationship Management	MNCS	Mean Normalized Citation Score
CWTS	Centre for Science and Technology Studies (in Dutch: Centrum voor Wetenschap en Technologische Studies)	MPhil	Master of Philosophy
DGS	Director of Graduate Studies	NETSPAR	Network for Studies on Pensions, Aging and Retirement
DSF	Duisenberg School of Finance	NSF	National Science Foundation
ECMI	Erasmus Centre for the Marketing of Innovation	NVAO	Accreditation Organisation of the Netherlands and Flanders (in Dutch: Nederlands-Vlaamse Accreditatieorganisatie)
ECTS	European Credit Transfer System	NWO	Netherlands Organisation for Scientific Research (in Dutch: Nederlandse Organisatie voor Wetenschappelijk Onderzoek)
EMAC	European Marketing Association	PhD	Doctor of Philosophy
ERC	European Research Council	ROBECO	Rotterdam's Investment Consortium (Rotterdamsch Beleggings Consortium)
ERIM	Erasmus Research Institute of Management	SEP	Standard Evaluation Protocol
ESE	Erasmus School of Economics	SER	Social and Economic Council of the Netherlands (in Dutch: Sociaal-Economische Raad)
EUR	Erasmus University Rotterdam	SSI	Survey Sampling International
FTE	Fulltime-equivalent	TI	Tinbergen Institute
GfK	Society for Consumer Research (in German: Gesellschaft für Konsumforschung)	TNCS	Total Normalized Citation Score
IESE	Institute of Higher Business Studies (in Spanish: Instituto de Estudios Superiores de la Empresa)	TNS	Taylor Nelson Sofres
IMF	International Monetary Fund	UCLA	University of California, Los Angeles
INFORMS	Institute for Operations Research and the Management Sciences	UPF	Universitat Pompeu Fabra
INSEAD	European Institute of Business Administration (in French: Institut Européen d'Administration des Affaires)	UvA	University of Amsterdam (in Dutch: Universiteit van Amsterdam)
IPRC	International Peer Review Committee	VU	VU University Amsterdam (in Dutch: Vrije Universiteit Amsterdam)

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Rotterdam, June 2015