

Assessment report
Limited Programme Assessment

Master Economics

Vrije Universiteit Amsterdam

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1. Executive summary

In this executive summary, the panel presents the main considerations which have led to the assessment of the quality of the programme Master Economics of Vrije Universiteit Amsterdam, which has been assessed according to the NVAO Assessment Framework.

The panel observed programme management has taken up the recommendations made in the previous assessment in 2010. Programme management has, among others, intensified the efforts to increase the influx of students, raised the number of BKO-certified lecturers and clarified the organisation.

The panel is positive about the Faculty's objectives to educate students not only in academic and professional knowledge and skills but also to train them to become responsibly thinking and acting professionals or academics. The latter is a distinct and valuable characteristic of the Vrije Universiteit economics programmes.

The panel approves of the broadness and the depth of the programme objectives, which allows students to gain knowledge and understanding of economic theory, to acquire research and academic skills, and to be able to address economic problems and economic policy-issues.

The intended learning outcomes of the programme meet the programme objectives, exhibiting, among others, disciplinary knowledge, analytical and quantitative skills, knowledge and understanding to address societal problems, research skills and communication and collaborative skills. The panel is positive about the specialisations *Development Economics*, *Public Policy*, *International and Macroeconomic Policy* and *Global Challenges*, which are open to the students. The intended learning outcomes are consistent with the domain-specific reference framework, which has been drafted by this Faculty and the economics programmes of Erasmus University Rotterdam and Wageningen University, and, in addition, correspond to master level requirements.

Programme management conducted a sound comparison to other economics master programmes in the Netherlands and abroad. From this comparison, it may be deduced the learning outcomes of this programme meet the standards of international renowned master programme in this domain.

The panel supports the policies of programme management to align the programme with trends in the professional field.

In the panel's view, the admission requirements and processes, emphasising the basic knowledge requirements of economics, mathematics and statistics, are adequate for this programme. The panel approves of the deficiency programme. Also, the panel supports the intentions and efforts of programme management to raise the number of students.

The panel observed the curriculum to reflect all of the intended learning outcomes adequately and regards the curriculum to be very well designed, being a balanced mix of challenging core courses offering fundamental knowledge and understanding and of specialisations, allowing students to apply knowledge in the context of the specialisation of their preference. The panel noted corresponding views on the principles governing the curriculum among the Faculty Board, programme management, lecturers and students and regards this to be effective for the quality of the programme.

The panel is satisfied about the educational principles and the study methods of the programme, as these are conducive to the students' learning processes. The number of contact hours is adequate. The policies regarding the introduction and deployment of new and innovative study methods are satisfactory.

The panel feels programme management has taken important steps to keep the student success rates at the current, satisfactory levels and encourages programme management to continue along this path.

The panel approves of the lecturers deployment and evaluation procedures, as these procedures ensure qualified lecturers to teach in the programme. The panel regards the lecturers to be very good researchers, working in the forefront of their field of expertise. In addition, the panel is especially positive about the educational capabilities of the lecturers, and their interaction with the students, which may be regarded as intensive and effective.

The panel is positive about the examination and assessment rules and regulations of the programme. They conform to the Vrije Universiteit and Faculty of Economics and Business Administration policy statements and include, among others, measures to assure the examinations' validity, the reliability of assessments and the competencies and expertise of examiners.

The examination methods in the programme are in line with the course contents to be assessed. The diversity of examination methods in courses and across courses allows for the assessment of knowledge and skills, relevant to the programme.

The panel observed programme management having drafted a comprehensive thesis manual, in which the timeline of the thesis writing process has been explained clearly. The supervision of the thesis is well organised. The thesis assessment process is a reliable process, as at least two examiners are involved and sound assessment forms are used. The panel welcomes the transition process from assessment forms to scoring models or rubrics, as these may raise the quality of the assessments further.

The panel ascertained the Examination Board to have the responsibilities and to work along the lines, as intended by Dutch applicable law. The Board monitors the examination and assessment processes and inspects examinations. The panel recommends to step up these inspections and to include theses in the quality assurance checks, as the Examination Board plans to do.

The panel finds the examinations of the courses to meet the courses' learning goals, to be of adequate quality and to be of a challenging level.

The theses the panel studied ranged from satisfactory to very good. Not one of the theses was assessed by the panel as unsatisfactory. The panel agrees with the grades of the theses, as given by the examiners.

The panel is positive about the positions the graduates obtained.

The panel assesses the programme Master Economics of Vrije Universiteit Amsterdam to be satisfactory and recommends NVAO to grant re-accreditation to this programme.

Rotterdam, 6 March 2017

Panel chair
Prof. dr. T.J. Wansbeek

Secretary
drs. W. Vercouteren RC

2. Assessment process

Certiked VBI received a request to conduct a limited programme assessment for the re-accreditation of the academic degree programme Master Economics. This request was submitted by Vrije Universiteit Amsterdam.

Certiked requested the approval by NVAO of the proposed panel of experts to conduct this assessment. NVAO have given their approval. The panel composition was as follows (for more detailed information please refer to Annex 4: Assessment panel composition):

- Prof. dr. T.J. Wansbeek, Emeritus Professor of Statistics and Econometrics, University of Groningen (panel chair);
- Prof. dr. J. Hartog, Emeritus Professor of Microeconomics with visiting scholar position, University of Amsterdam (panel member);
- Prof. dr. R. Kabir, Professor and Chair of Corporate Finance and Risk Management, University of Twente (panel member);
- S.M. van den Hoek, student Bachelor programme Tax Economics, University of Amsterdam (student member).

On behalf of Certiked, drs. W. Vercouteren RC was responsible for the process coordination and for drafting the panel's report. All panel members and the secretary signed a statement of independence and confidentiality.

The panel conducted this assessment on the basis of the NVAO Assessment Framework of 19 December 2014 (Staatscourant nr. 36791). Regarding the selection of the theses, the panel proceeded in line with the NVAO Guidelines for the assessment of final projects during external assessments of 18 February 2015. On 19 September 2016, NVAO determined the number of theses to be studied by the panel in this particular case.

The following procedure was adopted. The panel members studied the documents presented beforehand by programme management, including a number of theses (please refer to Annex 2 and 3: Documents reviewed and Theses reviewed).

Before the date of the site visit, the panel chair and the panel secretary met to discuss the assessment procedures. On 9 November 2016, the panel had a meeting to discuss the preliminary findings concerning the quality of the programme. Beforehand, the panel members had sent a number of questions to be put to the programme representatives during the site visit.

During the meeting on 9 November 2016, the findings of the panel members, including those concerning the theses, were discussed. On the basis of the input of the panel, the secretary summarised the questions, which served as a starting point for the discussions with the programme representatives during the site visit.

On 10 November 2016 and 11 November 2016, the panel conducted the site visit on the Vrije Universiteit Amsterdam campus. The site visit was conducted in accordance with the schedule drawn up beforehand (please refer to Annex 1: Site visit schedule). Prior to the site visit, programme management communicated the open office hours to the students in the programme and the staff. No one called on the panel.

A draft version of this report was finalised by the secretary, having taken into account the information presented as well as the findings and considerations of the panel. The panel members studied the draft report and made a number of changes. Thereupon, the secretary drew up the final report. This report was presented to programme management to be corrected for factual inaccuracies. After having been corrected for these factual inaccuracies, the report was sent to the institution's Board to accompany their request for re-accreditation.

3. Overview of the programme

3.1 Basic information about the programme

Administrative information about the programme:

Name programme in CROHO: Master Economics
 Orientation, level programme: Academic Master
 Grade: MSc
 Number of credits: 60.0 EC
 Specialisations: Generic Programme (no specialisation), Development Economics, Public Policy, International and Macroeconomic Policy, Global Challenges
 Location: Amsterdam
 Mode of study: Full-time (English-taught programme)
 Registration in CROHO: 66401

Administrative information about the institution:

Name of institution: Vrije Universiteit Amsterdam
 Status of institution: Government-funded university
 Institution's quality assurance: Approved

Quantitative data about the programme

Percentage of students who completed the programme in two years (n+1)

Cohort	2011	2012	2013
Percentage of students	88 %	79 %	73 %

Lecturers' qualifications

Qualification	MSc	PhD	BKO*
Percentage of lecturers	100 %	100 %	64 %

*BKO means having obtained Dutch University Teaching Qualification.

Student-to-staff ratio

The student-to-staff ratio is 28 : 1 (study year 2015 – 2016)

Contact hours

In regular periods, the contact hours are 12 hours per week. In periods 3, 5 and 6 this number is less. In these periods students are supervised individually, while preparing and completing the research project and the master thesis.

3.2 Main facts about the institution

The degree programme Master Economics is a programme of the Faculty of Economics and Business Administration of Vrije Universiteit Amsterdam.

Vrije Universiteit Amsterdam (VU) was founded in 1880. According to the website, the university aspires to be an open organisation, strongly linked to people and society. For the University, what matters is not just the acquisition of a greater depth of knowledge, but also the pursuit of a wider scope. VU expects students, researchers, PhD candidates and employees to look beyond their own interests and their own field.

The aim of Vrije Universiteit Amsterdam is to offer academic research and education at a high level of ambition, and to encourage free and open ideas and communication. In its own words, VU stands for universal university values such as academic freedom and independence. The basic philosophy of the university is expressed in three core values: responsibility, openness and personal engagement.

The Faculties of Vrije Universiteit Amsterdam are the Faculties of Dentistry, Earth and Life Sciences, Economics and Business Administration, Behavioural and Movement Sciences, Humanities, Law, Medicine, Sciences, Social Sciences and Theology. Nearly 25,000 students are enrolled in the programmes of the university. About 10,000 staff is employed by the university and by the affiliated VU Medical Center.

The Faculty of Economics and Business Administration offers four bachelor programmes, seven master programmes and 17 postgraduate programmes. Approximately 4,000 bachelor and master students and about 1,700 postgraduate students study at the Faculty and over 500 academic and non-academic staff are employed by the Faculty. The Faculty of Economics and Business Administration is the largest faculty of Vrije Universiteit Amsterdam.

In 2012, the Faculty of Economics and Business Administration started the process of reorganising all of the bachelor and master programmes, beginning with the bachelor programmes. The objectives of this process were to raise the quality of the programmes. Measures which have been taken, are more strict selection of incoming students, raising the education capabilities of the lecturers, restating the intended learning outcomes of the programmes and redesigning the curricula. In 2014, the Faculty offered these reorganised bachelor programmes for the first time.

At the time of this assessment process, the first two years of the bachelor programmes had been renewed, whereas the third and last year still was traditionally organised. The master programmes had not yet been renewed but will, in the coming years, starting in 2017, follow the bachelor programmes. The panel has taken this process of transition into account, when assessing this and the other programmes of the Faculty.

3.3 Intended learning outcomes

The intended learning outcomes of the programme are as follows.

- (Disciplinary knowledge) Students will know the main defining principles, methodological cornerstones, and tools in modern advanced microeconomics and macroeconomics, and possess applicable knowledge of core empirical methods and their statistical foundations. Graduates will be aware of the normative aspects of economics as a discipline, and the discipline's relation to other social sciences, humanities and arts.
- (Critical readership) Students are trained to read and understand important contributions to the literature of general economic analysis and of selected subfields and will have become critical readers.
- (Analytical and quantitative skills) Students will possess and develop analytical skills that will help them apply appropriate mathematical and empirical modelling tools. They will know how to translate economic hypotheses into statistical hypotheses and know how to apply statistical testing methodology. Graduates are able to analyse and substantially interpret empirical economic data, and will be capable of drawing policy conclusions where appropriate.
- (Societal and contextual relevance) Graduates have a feel for how their skills and tools can be applied to finding answers to pertinent social, societal, and economic problems. Students will have developed a critical attitude to the relevance and shortcomings of empirical data compared to theoretical requirements, and will be aware of potential limitations to the insights that can be gained from theoretical reasoning alone when addressing real-life issues.
- (Professional independence) Students will possess the skill of self-reflection, allowing them to independently identify and fill in any gaps in the knowledge they need to answer specific research questions and to acquire the use of new tools where necessary and appropriate to foray into unknown territory.
- (Professional skills) Graduates will be able to identify relevant economic issues, formulate appropriate research questions, and implement a plan for answering their question. Graduates will be able to work both independently and with others in teams, and will be able to present their findings to both expert and non-expert audiences.

3.4 Outline of the curriculum

In the table below, the programme curriculum is presented.

Courses	Credits
Advanced Methods for Applied Economic Research	6.0 EC
Advanced Microeconomics	6.0 EC
Advanced Macroeconomics	6.0 EC
Specialisation or elective	6.0 EC
Research project Economics	6.0 EC
Specialisation or elective	6.0 EC
Specialisation or elective	6.0 EC
Thesis and Presentation	18.0 EC
Total credits of the programme	60.0 EC
Courses to be taken for the specialisations in the programme are listed below	

Development Economics (specialisation):	30.0 EC
Microeconomics for Development	6.0 EC
Globalisation, Growth and Development	6.0 EC
Thesis in Development Economics	18.0 EC
Public Policy (specialisation):	30.0 EC
Economics of the Welfare State	6.0 EC
Industrial Organisation and Competition Policy	6.0 EC
Thesis in Public Economics to be understood in a wider sense)	18.0 EC
International and Macroeconomic Policy (specialisation):	30.0 EC
Macroeconomic Policy in the EU	6.0 EC
Globalisation, Growth and Development	6.0 EC
Thesis in Macroeconomics, International Economics of related subjects	18.0 EC
Global Challenges (specialisation):	30.0 EC
The Economics of Climate Change	6.0 EC
Globalisation, Growth and Development	6.0 EC
Thesis relating to economic aspects of pressing global issues	18.0 EC
Generic programme: any selection of electives	30.0 EC

4. Overview of assessments

Standard	Assessment
Standard 1. Intended learning outcomes	Satisfactory
Standard 2: Teaching-learning environment	Good
Standard 3: Assessment	Satisfactory
Standard 4: Achieved learning outcomes	Satisfactory
Programme	Satisfactory

5. Findings, considerations and assessments per standard

5.1 Standard 1: Intended learning outcomes

The intended learning outcomes of the programme have been concretised with regard to contents, level and orientation; they meet international requirements.

Findings

As the Dean of the Faculty of Economics and Business Administration explained to the panel, the main objectives of the Faculty are not only to train students to become experts in their field, but also to educate students to handle subjects and problems in a responsible way. So, students are not only trained content-wise but also with respect to their attitudes. These objectives are condensed in the values expressed in the Vrije Universiteit's mission statement, namely responsibility, openness and personal engagement. These values have been translated into the main objectives of the programme, which are to train the students as academics, professionals and citizens.

In preparation of this external assessment, the Faculty of Economics and Business Administration of Vrije Universiteit in collaboration with the management of the economics programmes of Erasmus University Rotterdam and Wageningen University updated the domain-specific reference framework for economics. The current reference framework is an update on a number of non-essential points of the 2009 edition, which was approved by the Deans of all Economics Faculties in the Netherlands. The major change has been the removal of sections referring to business administration.

The objectives of the programme are to bring students' knowledge and understanding of economic theory and tools and students' academic skills to an internationally accepted master level in this domain, to teach students to identify and address economic dimensions of current policy issues and to train them to solve economic problems by conducting sound economic research.

Programme management drafted the intended learning outcomes of the programme. These intended learning outcomes specify disciplinary knowledge in the economics domain, critical readership (evaluate critically economic theory and economic literature), analytical and quantitative skills (apply mathematical and statistical knowledge and tools to address, analyse and interpret economic phenomena and trends), societal and contextual relevance (address societal issues and problems by means of economic knowledge and understanding), professional independence (address new subjects and problems by building on previously acquired knowledge) and professional skills (research, communication, collaborative skills).

Programme management drafted a table, to show the correspondence of the intended learning outcomes of the programme to the Dublin-descriptors for master programmes. From this table may be deduced the programme intended learning outcomes match these Dublin-descriptors.

The programme intended learning outcomes have been compared to economics master programmes in the Netherlands and abroad. Programmes, which have been considered in this respect, are, among others, programmes of University of Amsterdam, Tilburg University, Barcelona Graduate School of Economics (Spain), University of Bristol, University of Essex, University of Manchester (all in the United Kingdom), University of Michigan-Ann Arbor, Johns Hopkins University and Columbia University (all in the United States). This programme has in common with these other programmes core courses on microeconomics, macroeconomics and research skills. This programme differs in offering a wider range of specialisations, not only international and macroeconomic policy and public policy, which are relatively common, but also development economics and global challenges, which are specific for this programme.

Programme management maintains relations with the professional field, in order to align the programme with the professional field requirements and trends. An Advisory Board with representatives of the professional field has been installed.

Considerations

The panel is positive about the Faculty of Economics and Business Administration objectives to train the students not only in terms of academic and professional knowledge and skills but to train them equally to become responsibly thinking and acting professionals or academics in the economics field. The panel holds the opinion the latter to be a distinct and valuable characteristic of the Vrije Universiteit economics programmes.

The panel welcomes the efforts of this Faculty and of the economics programmes of Erasmus University Rotterdam and of Wageningen University to update the 2009 domain-specific reference framework.

The panel is positive about the broadness and the depth of the programme objectives, allowing students to gain knowledge and understanding of economic theory and tools, to acquire research and academic skills, and to be able to address economic policy-issues and economic problems.

The panel studied the intended learning outcomes of the programme and observed these to meet the programme objectives, exhibiting, among others, disciplinary knowledge, analytical and quantitative skills, knowledge and understanding to address societal problems, research skills and communication and collaborative skills. The panel is positive about the specialisations *Development Economics*, *Public Policy*, *International and Macroeconomic Policy* and *Global Challenges*, which are offered to the students.

The panel regards the intended learning outcomes of the programme to match the Dublin-descriptors for master programmes and, therefore, to meet the requirements of a master level programme.

Programme management conducted a sound comparison to other economics master programmes in the Netherlands and abroad. From this comparison, it may be deduced the learning outcomes of this programme meet the standards of international renowned master programmes in this domain.

The panel supports the policies of programme management to align the programme with trends in the professional field.

Assessment of this standard

These considerations have led the assessment panel to assess standard 1, *Intended learning outcomes* to be satisfactory.

5.2 Standard 2: Teaching-learning environment

The curriculum, staff and programme-specific services and facilities enable the incoming students to achieve the intended learning outcomes.

Findings

The responsibility for the programmes of the Faculty of Economics and Business Administration rests with the Dean of the Faculty, and the Faculty Board. Programme management, being the programme director or, in the Faculty's larger programmes, the programme director assisted by the programme coordinator, is responsible for the organisation and the contents of the programme and for assuring and maintaining the quality thereof. Programme management is advised on the programme quality by the Programme Committee, composed of an equal number of lecturers and students. As will be elaborated under standard 3, an Examination Board has been put in place, monitoring the examinations and assessments of the programme.

The number of students enrolling in the programme was more or less stable the last six years, going from an influx of 34 students in 2010, 28 students in 2012 and 42 students in 2013 to an influx of 24 students in 2015. About 50 % of the incoming students are from the Vrije Universiteit own bachelor programmes in the economics domain, whereas about 10 % are from other Dutch universities and 40 % to 50 % come from abroad. Programme management wants to raise the influx to 50 to 60 students, by intensifying the information about the programme to VU Amsterdam bachelor students and by offering a minor in the VU Amsterdam economics and econometrics bachelor programmes.

The admission procedures and admission requirements are subject to the Faculty-wide regulations for master programmes. Students having a bachelor degree in economics, econometrics, mathematics, science or engineering may be admitted without condition. Applications are checked to see if applicants have the knowledge and skills required. Students with deficiencies in microeconomics, macroeconomics, statistics or econometrics and mathematics are to take a deficiency programme, which will be tailored to their individual background. Applicants are only admitted to the deficiency programme, if they can show a GRE-score of at least 85 %.

In the first periods of the curriculum core courses are offered, which are mandatory for all students and which offer fundamental knowledge. These courses are *Advanced Microeconomics*, *Advanced Macroeconomics* and *Advanced Methods for Applied Economic Research*. In addition, students are required to conduct the *Research Project Economics*, this being a literature review. The product of this project is a paper about the topic chosen, referring to the literature studied. The results of the project may be used as a starting point for the master thesis. In addition to these core courses, students select either one of the specialisations or take a generic programme, assembling a number of electives. These specialisations have been mentioned under standard 1. They are 30.0 EC and include two courses and the master thesis, the thesis having a topic referring to the specialisation selected. The specialisations or the generic programme are meant for students to learn to apply fundamental knowledge, gained in the core courses, to specific topics or policy issues.

The quality and the coherence of the curriculum are discussed twice per year between programme management and the lecturers.

Programme management presented a table in which the relations between the intended learning outcomes and the curriculum components for all of the specialisations have been specified. From this table, it may be deduced that for all of the specialisations all of the intended learning outcomes are addressed in one or more courses.

The programme educational principle is to teach students fundamental knowledge and understanding and to train them to apply these in specific contexts. Study methods in the programme are lectures, tutorials or workshops and self-study, the latter taking the major part. Interaction in lectures and tutorials between lecturers and students and among students is encouraged. The programme is rather small-scale, enabling the interaction. The study methods in the *Research Project Economics* and in the master thesis are supervision on an individual basis. In the research project, students are to present their draft paper to fellow students, who will give feedback.

To foster the introduction of new, innovative study methods, the Faculty of Economics and Business Administration has set up the Innovation Center. Lecturers are encouraged to suggest new study methods and may be granted financial support by the Faculty to develop or test their method. All innovations will be presented in the Innovation Center, with the purpose of other lecturers being informed about these methods, seeing the benefits and adopting these in their own classes.

Programme management has taken a number of measures to promote the students' study pace and the study success rates. Deficiency courses are offered in the deficiency programme. At the start of the programme refresher courses on mathematics and statistics are offered to bring all students to an equal level, regardless of their previous education. These courses do not yield any credits. Lecturers supervise and assist students. The students with whom the panel met, expressed being very content about their lecturers in this respect. The proportion of students completing the programme within one year was for the last five cohorts on average nearly 45 %, whereas the figure for completion within two years ranged from 73 % to 94 %, based on figures for the last four cohorts.

Lecturers are employed as researchers in one of the departments of the Faculty. The programme director is responsible for the deployment of the lecturers, discussing this with the department head. In the deployment process, the research and/or the professional track records of the lecturers are being taken into account. Underperformance by lecturers will be signalled by the programme director and the Programme Committee. Unfavourable scores in students evaluations may adversely affect tenure track prospects. The number of lecturers in the programme is 14 lecturers. All of them have obtained a PhD. More than 60 % of them is in possession of a BKO-certificate, testifying to their capabilities in education. The students with whom the panel met, described the lecturers as being good and stimulating teachers and being approachable and helpful.

Considerations

The admission requirements, emphasising the basic knowledge requirements of economics, mathematics and statistics, are adequate for this programme. The panel approves of the deficiency programme, which has been put in place for students having deficiencies.

The panel supports the intentions and the efforts of programme management to raise the number of students in the programme.

The curriculum reflects all of the intended learning outcomes of the programme adequately and evenly. The panel regards the curriculum to be very well designed, being a balanced mix of fundamental knowledge and understanding and application of knowledge. The curriculum is composed on the one hand of challenging core courses offering fundamental knowledge and understanding of economics and on the other hand of a range of specialisations, allowing students to apply their knowledge in the context of the specialisation of their preference. The panel noted corresponding views on the principles governing the curriculum among the Faculty Board, programme management, lecturers and students and regards this to be effective for the quality of the programme.

The panel is satisfied about the educational principles and the study methods of the programme, as these are conducive to the students' learning processes. The number of contact hours is adequate. The policies regarding the introduction and deployment of new and innovative study methods are satisfactory.

The panel feels programme management has taken important steps to keep the student success rates at the current, satisfactory levels and encourages programme management to continue along this path.

The panel approves of the lecturers deployment and evaluation procedures, as these procedures ensure qualified lecturers to teach in the programme. The panel regards the lecturers to be very good researchers, working in the forefront of their field of expertise. In addition, the panel is especially positive about the educational capabilities of the lecturers, and their interaction with the students, which may be regarded as intensive and effective.

Assessment of this standard

These considerations have led the assessment panel to assess standard 2, *Teaching-learning environment* to be good.

5.3 Standard 3: Assessment

The programme has an adequate assessment system in place.

Findings

The examinations and assessments of this programme, as of all the other programmes of the Faculty of Economics and Business Administration, are governed by the Vrije Universiteit Assessment Policy, this being part of the VU Quality Assurance Handbook, as well as by the Faculty Assessment Policy, which has been derived from this VU Assessment Policy. The examination and assessment rules and regulations of this and the other programmes of the Faculty are in line with these University and Faculty policy statements.

For this programme as well as for each of the other Faculty of Economics and Business Administration programmes, rules and regulations for the examinations and assessments have been specified and have been implemented. Firstly, programme management drafted an assessment plan, in which the courses' learning objectives are shown to cover the programme intended learning outcomes. This plan allows to verify whether the examinations of the courses comply with the intended learning outcomes of the programme. Secondly, programme management took a number of measures to promote the validity, reliability and transparency of examinations and assessments. To enhance the validity of the examinations, each of the examinations is prepared by one of the lecturers and is presented to another lecturer for review. The examiners ensure examinations to meet the course objectives and to conform to the intended learning outcomes of the programme. To foster the reliability of the assessments, answer models are being used by the examiners. This way, a degree of objectivity is introduced in the assessments. To promote the transparency of the examinations, students may inspect the grading of their work and examiners will explain the grading to students upon request. Thirdly, programme management ensures the examiners to have adequate expertise and competencies to fulfil their tasks. To this effect, examiners are formally appointed by the Examination Board, following the recommendation of the programme director. Fourthly, the examination methods or assessment types of the courses are to be consistent with the courses' learning objectives and study methods. In the assessment plan, these examination methods have been listed. Examination methods include written examinations with open questions, individual cases/papers, group cases/papers, presentations and research projects, such as the *Research Project Economics*. In most of the courses, multiple examinations are to be taken by the students and the final grade of the courses is a composite grade, this being the weighed outcome of the grades of the course components.

At the end of the programme, students are required to complete their master thesis. In preparation, they conduct the *Research Project Economics*. For this project and for the master thesis, programme management drafted a manual. In this manual, the procedures and the timeline for the thesis have been stipulated. Students receive supervision of the thesis writing process by a supervisor, being a lecturer in the programme. Students are required to submit their thesis and to present and defend the thesis before the examiners and before their fellow students. Theses are assessed by both the thesis supervisor and the second reader. These two examiners assess and grade the thesis independently and meet to arrive at the final grade. In case they cannot agree, a third examiner will be asked to grade the thesis. The thesis coordinator and the programme director tend to study theses as well. For the thesis assessment, the examiners make use of assessment forms, showing the criteria to be assessed. The programmes of the Faculty are in the transition process from these forms to scoring models or rubrics, specifying the assessment criteria and statements per criterion to support the grading. Theses are checked for plagiarism and plagiarism scores are mentioned on the assessment forms or scoring models.

For the programmes of the Faculty of Economics and Business Administration, two Examination Boards have been installed, one for all of the regular bachelor and master programmes of the Faculty and one for all of the accredited postgraduate programmes. As this programme is one of the regular bachelor and master programmes of the Faculty, the first mentioned Examination Board has the authority. The Examination Board consists of a number of members of the Faculty as well as an external expert on examinations and assessments. The Board monitors examinations and assessments processes, in accordance with the Faculty Regulations and Guidelines regarding Examinations. In addition, the Examination Board ensures examinations, including final examinations, to conform to quality standards. In recent years, the Board scheduled training sessions for examiners and analysed multiple-choice examinations. The Examination Board studies assessment plans to verify the contents thereof. In 2016 – 2017, written examinations with open questions are analysed as well. The Board inspects examinations on an at random basis and has the intention to inspect examinations and theses more systematically in the coming years.

Considerations

The panel is positive about the examination and assessment rules and regulations of the programme. They not only conform to the Vrije Universiteit and Faculty of Economics and Business Administration policy statements but also address subjects which are relevant for assuring the examinations and assessments quality. These rules and regulations include, among others, measures to assure the examinations' validity, the reliability of assessments and the competencies and expertise of examiners.

The panel approves of the examination methods, that programme management has selected. They are in line with the course contents to be assessed. The diversity of examination methods in courses and across courses allows for the assessment of both knowledge and skills, relevant to the programme.

Programme management drafted a comprehensive thesis manual, in which the timeline of the thesis writing process is explained clearly. The supervision and assessment of the thesis are well organised. The assessment of the theses is a reliable process, as at least two examiners are involved and sound assessment forms are used. The panel welcomes the transition process from assessment forms to scoring models or rubrics, as these may raise the quality of the assessments further.

The panel ascertains the Examination Board to have the responsibilities and to work along the lines, as intended by Dutch applicable law. The Board monitors the examination and assessment processes and inspects examinations. The panel recommends to step up these inspections and to include theses in the quality assurance checks, as is intended by the Examination Board.

Assessment of this standard

The considerations have led the assessment panel to assess standard 3, *Assessment* to be satisfactory.

5.4 Standard 4: Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Findings

In the two most recent years, 2014 – 2015 and 2015 – 2016, the average grade for the master theses as estimations for the learning outcomes achieved by the graduates, was 7.7. In a few instances, theses led to an article in a peer-reviewed journal.

Programme management informs students about the labour market for graduates and about their career perspectives. In collaboration with the Faculty Office of Career Services and with students associations, programme management organises events for students to that effect.

The graduates of the programme are trained to enter the labour market. Graduates tend to find positions relatively easily. In the last few years, about 30 % of the graduates found a position in the financial sector, about 25 % of them were employed in the public sector, about 10 % became a consultant and about 25 % continued in research positions. About 12 % of the latter category graduates entered into PhD-trajectories.

Considerations

The panel studied examinations of a number of courses in the programme. The panel establishes these examinations to be of adequate quality and of an appropriate level, meeting the courses' learning goals. The examinations are considered by the panel to be challenging and to address up-to-date subjects.

The panel studied four theses of students in the programme. These theses ranged from satisfactory to very good. Not one of the theses is considered by the panel to be unsatisfactory. The panel agrees with the grades of the theses, as given by the examiners.

The panel welcomes the initiatives by programme management to inform students about their career perspectives. The panel is positive about the positions the graduates obtained.

Assessment of this standard

The considerations have led the assessment panel to assess standard 4, *Achieved learning outcomes* to be satisfactory.

6. Recommendations

In this report, recommendations have been listed. For the sake of clarity, these recommendations are reproduced here.

- To continue the policy and measures by programme management, already in place, to raise the student success rates.
- To step up the inspections of examinations by the Examination Board and to include the theses in these quality assurance checks, as the Examination Board is already planning to do.

Annex 1: Site visit schedule

The site visit was conducted in Amsterdam on 10 November 2016. On 11 November 2016, the panel met with the Examination Board.

Site visit schedule for 10 November 2016.

08.30 h. – 09.00 h.	Arrival and deliberations panel (closed session)
09.00 h. – 09.45 h.	Faculty Board Prof. dr. W. Verschoor (Dean of Faculty Economics and Business Administration), drs. R. de Crom (Faculty Director of Education), M. Eigenhuis (Student Assessor Faculty Board)
09.45 h. – 10.45 h.	Programme management Bachelor Economics and Business Economics Programme management Bachelor Econometrics and Operations Research Prof. dr. H. de Groot (programme director, Bachelor Economics and Business Economics), dr. M. Schauten (programme coordinator, Bachelor Economics and Business Economics), dr. R. Heijungs (associate professor, Bachelor Economics and Business Economics), prof. dr. B. Heidergott (programme director, Bachelor Econometrics and Operations Research), dr. C. Bos (programme coordinator, Bachelor Econometrics and Operations Research), dr. R. van den Brink (associate professor, Bachelor Econometrics and Operations Research)
11.00 h. – 12.00 h.	Lecturers and examiners Bachelor Economics and Business Economics Lecturers and examiners Bachelor Econometrics and Operations Research Dr. T. Budding (assistant professor, chair Programme Committee, Bachelor Economics and Business Economics), dr. H. Bloemen (associate professor, Bachelor Economics and Business Economics), prof. dr. M. Hofkes (Professor of Environmental Economics, Bachelor Economics and Business Economics), dr. H. Houba (associate professor, member Programme Committee, Bachelor Econometrics and Operations Research), dr. A. Estevez Fernandez (assistant professor, Bachelor Econometrics and Operations Research), dr. L. Hoogerheide (associate professor, Bachelor Econometrics and Operations Research)
12.00 h. – 12.45 h.	Students and alumni Bachelor Economics and Business Economics Students and alumni Bachelor Econometrics and Operations Research S. Plaul (second year student, member Programme Committee, Bachelor Economics and Business Economics), O. Papôt (third year student, Bachelor Economics and Business Economics), Q. Wiersma (third year student, Bachelor Economics and Business Economics), J. Koster (third year student, Bachelor Economics and Business Economics), E. Hoogenboom BSc (alumna, Bachelor Economics and Business Economics), J. Rutgers (first year student, member Programme Committee, Bachelor Econometrics and Operations Research), R. Rasiawan (second year student, member Programme Committee, Bachelor Econometrics and Operations Research), A. Mohazzab (second year student, Bachelor Econometrics and Operations Research), T. Dilaver MSc (alumnus, Bachelor Econometrics and Operations Research), R. Wulffraat BSc (alumnus, Bachelor Econometrics and Operations Research)

- 12.45 h. – 13.45 h. Lunch panel (closed session), open office hours 12.45 h. – 13.15 h.
- 13.45 h. – 14.45 h. Programme management Master Economics
Programme management Master Econometrics and Operations Research
Prof. dr. B. van der Klaauw (programme director, Master Economics), prof. dr. P. Gautier (Professor of Macro Labor Economics, Master Economics), prof. dr. M. Lindeboom (Professor of Economics, head of Department Economics, Master Economics), prof. dr. B. Heidergott (programme director, Master Econometrics and Operations Research), dr. R. van den Brink (associate professor, Master Econometrics and Operations Research), dr. A. Ridder (associate professor, Master Econometrics and Operations Research)
- 14.45 h. – 15.30 h. Lecturers and examiners Master Economics
Lecturers and examiners Master Econometrics and Operations Research
Dr. R. Oostendorp (Professor of International Economics, member Programme Committee, Master Economics), dr. S. Dobbelaere (associate professor Master Economics), prof. dr. J. Moraga Gonzales (Professor of Microeconomics. Master Economics), dr. ir. R. Sitters (assistant professor, Master Econometrics and Operations Research), dr. C. Bos (associate professor, Master Econometrics and Operations Research), dr. I. Lindner (associate professor, Master Econometrics and Operations Research)
- 15.45 h. – 16.15 h. Students and alumni Master Economics
Students and alumni Master Econometrics and Operations Research
N. Stoelinga MSc (alumna, Master Economics), A. Slavin BSc (student, member Programme Committee, Master Economics), M. Konings MSc (alumnus, Master Economics), N. Nguyen BSc (student, member Programme Committee, Master Econometrics and Operations Research), Y. Weesie BSc (student, Master Econometrics and Operations Research), J. van Brummelen BSc (student, Master Econometrics and Operations Research), K. Fontijn BSc (student, Master Econometrics and Operations Research), V. Rensink MSc (alumna, Master Econometrics and Operations Research), E. Blanken MSc (alumna, Master Econometrics and Operations Research)
- 16.15 h. – 17.30 h. Deliberations panel (closed session)
- Site visit schedule for 11 November 2016.
- 08.45 h. – 09.45 h. Examination Board regular bachelor programmes and master programmes
Examination Board postgraduate programmes
Prof. dr. B. van den Hooff (chair Examination Board regular programmes), prof. dr. H. van Herk (member Examination Board regular programmes), mr. drs. H. Welling (secretary Examination Board regular programmes), L. Spoor RA (chair Examination Board postgraduate programmes), prof. dr. F. Roozen (former chair Examination Board postgraduate programmes), B. de Graaff MSc (secretary Examination Board postgraduate programmes)

Annex 2: Documents reviewed

The panel studied the following documents, presented prior to the site visit

- Critical Reflection Report Limited Programme Assessment Master Economics
- Redesign Faculty of Economics and Business Administration programmes
- Domain-specific frame of reference
- Intended learning outcomes
- Programme overview 2015 – 2016
- Course descriptions 2015 – 2016
- Assessment plan 2016 – 2017
- Thesis manual and assessment form 2015 – 2016
- Academic and Examination Regulations 2015 – 2016
- Rules and Regulations regarding examinations 2015 – 2016
- Overview of academic staff, including quality
- List of graduates in academic years 2014 – 2015 and 2015 – 2016
- Intake, drop out and success rates
- Staff/student ratio
- Average number of contact hours

On the day of the site visit, programme management presented the following documents

- Applications and enrolments figures
- Course material of a number of selected courses of the programme
- Examinations of a number of selected courses of the programme
- Programme management annual reports
- Programme Committee annual reports
- Examination Board annual reports

Annex 3: Theses reviewed

The theses of the following four students have been selected for review by the panel

- 1980998
- 1933027
- 2069709
- 2183242

Annex 4: Assessment panel composition

The assessment panel had the following composition:

- Prof. dr. T.J. Wansbeek, Emeritus Professor of Statistics and Econometrics, University of Groningen (panel chair);
- Prof. dr. J. Hartog, Emeritus Professor of Microeconomics with visiting scholar position, University of Amsterdam (panel member);
- Prof. dr. R. Kabir, Professor and Chair of Corporate Finance and Risk Management, University of Twente (panel member);
- S.M. van den Hoek, student Bachelor programme Tax Economics, University of Amsterdam (student member).

Prof. dr. T.J. Wansbeek, panel chair

Mr. Wansbeek is Emeritus Professor of Statistics and Econometrics at University of Groningen. He took his doctorate from University of Leiden. Among others, he held positions as Professor of Microeconomics at University of Amsterdam, as the Dean of the Faculty of Economics and Business of University of Amsterdam and as the Dean of the Faculty of Economics of University of Groningen. He was and is an editorial board member of a series of academic journals, such as *Journal of Econometrics*. Mr. Wansbeek held and holds a number of visiting scholar positions at, among others, University of Southern California, United States and Zhejiang University, China.

Prof. dr. J. Hartog, panel member

Mr. Hartog is Emeritus Professor of Microeconomics at University of Amsterdam, holding a visiting scholar position at this university. He took his doctorate from Erasmus University Rotterdam. At this university, he held the position of researcher and associate professor, subsequently becoming Professor of Microeconomics at University of Amsterdam. He held a number of visiting positions at universities in countries Europe, the United States and Asia. He also was an editor and referee for a number of international academic journals. Mr. Hartog is a member of the Royal Netherlands Academy of Sciences.

Prof. dr. R. Kabir, panel member

Mr. Kabir is Professor and Chair of Corporate Finance and Risk Management at University of Twente and Head of the Department of Finance and Accounting. He took his doctorate from Maastricht University. He held visiting scholar positions at, among others, Central University of Finance and Economics, Beijing, China, New York University, United States and University of Melbourne, Australia. Before becoming Professor at University of Twente, Mr. Kabir was Associate Professor of Finance at Tilburg University and Professor of Finance at University of Stirling, United Kingdom.

S.M. van den Hoek, student member

Ms. Van den Hoek is a student in the Bachelor programme Tax Economics of University of Amsterdam. She has taken on a number of extra-curricular activities, such as being the chair of the Student Association of her programme and being a member and the chair of the Student Council of the Faculty of Economics and Business of University of Amsterdam. In addition, Ms. Van den Hoek is employed by Canal Company as a guide and a host.