Object: amendment of Art.4.5 of the call for selection of n. 13 internship grants at the Department of Economics A.A 2018/2019, DEC N. 519/2019 Prot. n. 0028834 del 21/05/2019

THE DIRECTOR of DEPARTMENT OF ECONOMICS

HAVING REGARD to the call for selection of n. 10 internship grants at the Department of Economics A.A 2018/2019, DEC N. 519/2019 Prot. n. 0028834 del 21/05/2019;

CONSIDERED that it is important to provide this opportunity for internship to an increasing number of students and recent graduates;

HEARING the Board of the Research Centre VERA;

establishes the following

Art. 1

The description of Art.4.5 of the call for selection of n. 13 internship grants at the Department of Economics A.A 2018/2019, DEC N. 519/2019 Prot. n. 0028834 del 21/05/2019, must be integrated with the following text:

4.5 The following applications will be excluded from evaluation:

[OMISSIS]

- Applications from candidates that were beneficiaries of the grant in the previous call (DEC N. 1162/2018 Prot. n. 0070963 del 20/12/2018).

[OMISSIS]

Venice, 2019-05-28

The Director
of Department of Economics
Prof.ssa Monica Billio

Person in charge of the procedure
Ing. Silvia Lovatti
CALL FOR SELECTION OF N. 13 INTERNSHIP GRANTS AT THE DEPARTMENT OF ECONOMICS
A.A 2018/2019

Art. 1 – Scope
1.1 The Department of Economics, within the new Center VERA (Venice center in Economic and Risk Analytics for public policies), offers a number of internship projects to the following categories of students:
1) students enrolled in the Master's Degree Courses of the Department of Economics and recent graduates of the Master's Degree Courses of the Department of Economics (less than 6 months).
2) students enrolled in the International Master in Economics and Finance – IMEF.
These internship projects have the objective to promote the development of professional and research skills useful for their orientation and subsequent labour market integration.

1.2 Thirteen grants are available, 10 funded by the Department of Excellence Project and 3 funded by the Association Alumni, within a collaboration between the Association and the Department of Economics on the themes of economics and finance. The maximum duration of the internship periods will be 4 months and will take place between July and December 2019. The total funding for each internship will be € 1843,31 (gross salary). Each internship project, including specific objectives, required knowledge and skills as well as the intern tutors, is described in Annex A, which is an integral part of this call.

1.3 The internship will take place at the Department of Economics.

1.4 At the request of the student, the internship activity can be validated as the compulsory internship to acquire university credits planned in the Department of Economics Master’s degree program to which the student is enrolled, and in the IMEF Master program.

Art. 2 – Admission requirements
2.1 Up to a maximum of 10 internship grants are reserved for students regularly enrolled in the Master's Degree Courses of the Department of Economics for the 2018/2019 academic year and for recent graduates of the Master's Degree Courses of the Department of Economics (less than 6 months at the closing date of the call, 21 June 2019).

2.2 A minimum of 3 internship grants are reserved for students regularly enrolled in the International Master in Economics and Finance – IMEF for the 2018/2019 academic year.

2.3 If the internship grants reserved for students regularly enrolled in the Department of Economics for the 2018/2019 academic year and for its recent graduates (less than 6 months) – (see art. 2.1) are not fully assigned, they can be assigned to students enrolled in the International Master in Economics and Finance – IMEF.
2.4 If students already receive a grant economically incompatible with the grant of the present call, they can apply and, if the merit requirements are met, they can decide to carry out the internship project renouncing the grant. The total numbers of internships cannot exceed 15 (13 with grants and 2 without grants), therefore the acceptance of internship applications "without grant" should be subject to the compliance of such limits.

2.5 The requirements for applying to the present call must be met by the deadline indicated in the following art.3.

Art. 3 – Applications

3.1 Applications must be submitted no later than 21 June 2019 by one of the following procedures:
   a) Delivery by hand to the Secretariat of the Department of Economics, San Giobbe, Cannaregio 873 (hours: Monday – Friday, 10 am - 1 pm). Contact for VERA Center, Marianna Morelli, office D.005;
   b) Sending to the following Address of Certified Electronic Mail (CEM): protocollo@pec.unive.it. Please consider that the message can only be sent by another Certified Electronic Mailbox; the application sent by a non Certified mailbox cannot be considered valid. Documents must be attached in PDF format only;
   c) Sending by ordinary e-mail to the following address: centro.vera@unive.it. Documents must be attached in PDF format only;
   d) Sending by certified mail with return receipt to the following address: Università Ca’ Foscari - Dipartimento di Economia, San Giobbe, Cannaregio 873, 30121 Venezia. In this case, please note that the date considered as proof is the date of receipt and not the postmark date.

3.2 The application form must include also the following documents:

For students regularly enrolled in the Master's Degree Courses and for recent graduates (less than 6 months)
   • Dated and signed Curriculum vitae
   • Self certification of exams taken (date of exams, marks and numbers of university credits – CFU, Crediti Formativi Universitari) as well as the weighted average exam marks
   • Motivation letter, using the format attached to this announcement
   • Scanned copy of a valid ID document.

For students regularly enrolled in the International Master in Economics and Finance – IMEF
   • Dated and signed Curriculum vitae
   • Self certification of the Master’s Degree diploma (including the final mark)
   • Self certification of IMEF exams taken (dates and marks of exams)
   • Motivation letter, using the format attached to this announcement
   • Scanned copy of a valid ID document.

3.3 Applications received after the deadline or applications received through other procedures, or unsigned applications will not be considered valid.

3.4 The University is not responsible for any failure to receive communications due to incorrect or incomplete indication of address by the applicant or to the lack of or the untimely communication of change of address, as well as possible postal mistakes not attributable to the fault of the administration itself.

Art. 4 - Commission and selection of applicants

4.1 A commission appointed by Decree of the Department Director will evaluate the candidates on the basis of their qualifications and motivation letters.

4.2 In a preliminary session, the Commission will define the evaluation criteria and the scoring rules for the professional and academic curriculum vitae and for the motivation letter, as well as the minimum threshold for grant eligibility.
4.3 The ranking list of students enrolled in the Master’s Degree Courses and of recent graduates (less than 6 months) will be formulated on the basis of the following criteria:

- weighted average exam marks at the closing date of the call;
- numbers of University credits (CFU, Crediti Formativi Universitari) at the closing date of the call;
- evaluation of the Curriculum Vitae;
- evaluation of the motivation letter that should set out in particular the student’s interests, the coherence between academic background and the activities and objectives of the internship projects, as well as the preferential qualifications/skills and knowledge required for each project (See Annex A).

4.4 The ranking list of students regularly enrolled in the International Master in Economics and Finance – IMEF will be formulated on the basis of the following criteria:

- final mark of the Master’s Degree diploma;
- average IMEF exam marks at the closing date of the call;
- evaluation of the Curriculum Vitae;
- evaluation of the motivation letter that should set out in particular the student’s interests, the coherence between academic background and the activities and objectives of the internship projects, as well as the preferential qualifications/skills and knowledge required for each project (See Annex A).

4.5 The following applications will be excluded from evaluation:
- Applications which do not comply with the admission requirements of the announcement
- Applications which do not comply with the instructions indicated in art.3
- Applications from candidates that were beneficiaries of the grant in the previous call (DEC N. 1162/2018 Prot. n. 0070963 del 20/12/2018).

Art. 5 – Ranking list
5.1 At the end of the evaluation process, the Commission will draw up two ranking lists in order of decreasing scores of each candidate.

5.2 The ranking lists will be published on the web site of the Department of Economics at the following web address https://www.unive.it/pag/35192/, after 30 June 2019.

Art. 6 – Assignment of grants
6.1 At the end of the evaluation process, the Secretariat of the Department of Economics will notify the selected candidates, communicating the starting date of the internship grant.

6.2 The winners will send their acceptance (via e-mail to the following address: centro.vera@unive.it) within 5 days from notification. If a candidate turns down a grant, it may be assigned to the candidate ranked next.

6.3 Grants will be paid in one single instalment at the end of the internship after the submission of the final report approved by the academic tutor.

Art. 7 – Obligations for winners
7.1 Winning students, with the support of the “company” and academic tutors, must, as a condition of the grant, agree to carry out the approved procedures to set up their internship, to prepare training projects and all the related administrative procedures.

Art 8 - Incompatibility
8.1 The present grant can be received in conjunction with any other grants except in case of express incompatibility specified by applicable law, Regulations of the University and other specific calls in which the candidates participated (See Art. 2.4)
Art. 9 – Cross-reference
9.1 For any relevant matters not mentioned in the call, reference is made to the current University Regulation for the assignment of grants, study awards and incentives to students to sustain enrollment for courses and other specific learning activities.

Art. 10 – Person in charge of the procedure
10.1 The person in charge of the selection procedure, within Law n.241/1990, is the Secretary of the Department of Economics, Ing. Silvia Lovatti. For further information concerning the selection procedure, please send an e-mail to centro.vera@unive.it.

Art.11 – Processing and protection of personal data
11.1. Personal data sent by the candidates with the application forms will be processed according to national and European legislation (Italian Legislative Decree n. 196/2003 and Regulation EU 2016/679). For further information https://www.unive.it/pag/36610/.

Department Director
Prof. Monica Billio

Person in charge of the procedure
Ing. Silvia Lovatti
1. ESG CRITERIA AND SUSTAINABLE INVESTMENT

PROJECT DESCRIPTION
ESG criteria are used by socially responsible investors (individual as well as institutional) to evaluate and select investment opportunities that match their own values. The increasing demand for socially responsible investment products that are compliant with ESG criteria, highlights the need to go deep into the analysis of the relations among return, risk and sustainability criteria. Different contributions in the literature provide discordant evidences. As a result, the inclusions of investment goals along these dimensions into a portfolio selection and management model is not trivial and require a deeper understanding of the interaction of asset behavior along these dimensions.

To this aim the research will tackle the following steps:
1. Review of literature contributions on the analysis of the relations among return/risk/sustainability criteria with specific reference to the most recent contributions.
2. Analysis of the risk profile of ESG compliant investment products with specific reference to ETFs and Equity Indexes.
3. Analysis of the interaction between risk and ESG performance for the considered investment products.
4. Analysis of the interaction between return and ESG performance for the considered investment products.
A final report where methods and results are discussed is part of the research output.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Higher average marks in statistics and mathematics, taken and passed the exams in econometrics and numerical methods for economics and finance. Programming skills (MATLAB, R, Python) and statistical data analysis.

TUTOR: Diana Barro

2. DATA ANALYTICS FOR WEALTH MANAGEMENT

PROJECT DESCRIPTION
Recently technological advancement and large availability of data pathed the way the development of new resources in the personal wealth management. Risk profiling is a key element of the process and has a specific relevance, also, from a regulatory point of view. Indeed, the inadequate assessment of the client’s risk profile can be a weakness of robo-advisory. On the other hand, the large availability of data represents a rich source of information on the client that can improve the service. The aim of the research is to study how the use of artificial intelligence and robo-advisory platforms can affect and modify risk profiling.

To this aim the research will tackle the following steps:
1. Analysis of the on-line risk profiling and matching tools implemented by robo-advisory platforms.
2. Review of literature contributions on risk profiling with specific reference to risk appetite and risk capacity.
3. Development of a goal-based tailored decision model that allows to include a variable risk profile with respect to market conditions and life-time cycle.
A final report where methods and results are discussed is part of the research output.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Higher average marks in statistics and mathematics, taken and passed the exams in econometrics and numerical methods for economics and finance. Programming skills (MATLAB, R, Python) and statistical data analysis.

TUTOR: Diana Barro, Marco Corazza

3. PREDICTIVE POLICING METHODS

PROJECT DESCRIPTION
The availability of big data on the criminal activity and on the regular human and economic activities in urban areas allows for predicting crimes and for a more effective police activity. The aims of the research are:
• to provide a review of the quantitative methods used in predicting crimes (e.g., data mining, regression models, risk terrain, agent Based) with large dataset;
• to provide suitable frameworks for predicting crime in urban areas (e.g. for the city of Venice), for cleaning data and discovering false positives in crime raw data;
• to develop the code for the analysis;
• to check the effectiveness of the proposed methods on both simulated data and real data;
• to write a final report where methods and results are presented and discussed.

Keywords
Big Data, Forecasting, Predictive Policing, Smart cities, Resilience.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Programming skills in R, statistical data analysis; otherwise experience in MATLAB o Phyton can be considered; higher average marks in statistics and mathematics, taken and passed the exams in econometrics and numerical methods for economics and finance.

TUTOR: Monica Billio, Roberto Casarin

4. ANALYZING AND MODELLING THE INTERLOCKING DIRECTORATE NETWORK IN THE ITALIAN FIRMS

PROJECT DESCRIPTION
In the interlocking directorate network an edge between two firms emerges when one or more CEOs of two different firms sit on each other’s boards.
• to review the literature on interlocking directorates from different fields with emphasis on the more recent modelling and empirical findings;
• to extract the interlocking directorate networks for Italian firms and to provide network analysis;
• to make inference on random network models using interlocking directorate data and develop further empirical investigations on the relationship between the network topology and the balance sheet indicators;
• to write a final report where methods and results are presented and discussed.

Keywords
Networks extraction, Large network data, Big data, interlocking directorate.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Programming skills in R, statistical data analysis; otherwise experience in MATLAB o STATA can be considered; higher average marks in statistics and mathematics, taken and passed the exams in econometrics and numerical methods for economics and finance.

TUTOR: Roberto Casarin, Giacomo Pasini

5. DIMENSIONALITY REDUCTION TECHNIQUES FOR ENTROPY ESTIMATION

PROJECT DESCRIPTION
Entropy measures are widely used in various fields. The spanning length of the graph can be used to estimate entropy and information divergence. The application of this estimator on large datasets can be challenging. The aims of this research are:
• to review the minimum spanning tree algorithms and the application to entropy estimation;
• to develop dimensionality reduction techniques to make feasible the application of this estimator to large datasets;
• to study the properties and effectiveness of the estimator on simulated datasets and on large financial and economic data;
• to write a final report where methods and results are presented and discussed.

Keywords:
Dimensionality reduction, Entropy, Inference, Information theory, Large dataset.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Programming skills in R, statistical data analysis; otherwise experience in MATLAB o Phyton can be considered; higher average marks in statistics and mathematics, taken and passed the exams in econometrics and numerical methods for economics and finance.

TUTOR: Roberto Casarin, Monica Billio
6. LIKELIHOOD FREE METHODS FOR INFERENCE ON COMPLEX MODELS WITH APPLICATION TO SOCIAL, ECONOMIC AND FINANCIAL NETWORKS

PROJECT DESCRIPTION
Complex models often have intractable likelihoods, so methods that involve evaluation of the likelihood function are infeasible. The aims of the research are
• to provide a review of the likelihood free methods (e.g., ABC or synthetic likelihood) used in fitting complex models large dataset;
• to use likelihood free methods to make inference on complex models such as random networks models;
• to develop the code for the analysis;
• to apply the model and methods for networks data from economics and finance such as trade, financial flows networks, financial contagion networks;
• to write a final report where methods and results are presented and discussed.

Keywords
Inference methods, Large Networks Data, Complex models, Big data.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Programming skills in R, statistical data analysis; otherwise experience in MATLAB o Phython can be considered; higher average marks in statistics and mathematics, taken and passed the exams in econometrics and numerical methods for economics and finance.

TUTOR: Stefano Tonellato, Roberto Casarin

7. BAYESIAN INFEREN CE FOR NETWORK MODELS WITH APPLICATION TO SOCIAL, ECONOMIC AND FINANCIAL NETWORKS

PROJECT DESCRIPTION
The aims of the research are
• to use Bayesian inference methods making inference and model selection for network models in the class of exponential random graphs;
• to develop the code for the analysis;
• to apply the model and methods for networks data from economics and finance such as trade, financial flows networks, financial contagion networks;
• to write a final report where method and results are presented and discussed.

Keywords:
Network models, Bayesian methods, Large network data, Big data, Financial networks.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Programming skills in R, statistical data analysis; otherwise experience in MATLAB o Phython can be considered; higher average marks in statistics and mathematics, taken and passed the exams in econometrics and numerical methods for economics and finance.

TUTOR: Stefano Tonellato, Roberto Casarin

8. RENEWABLE ENERGY AND AGRICULTURE

PROJECT DESCRIPTION
Two strategic objectives are at the base of the growing interest in renewable energy: to contribute to reducing energy dependency and counteract the effects of climate change.
In agriculture, there are other reasons. First of all, the sustainability of the agricultural development model: agro-energies represent a necessity for the sustainability of the European production model. On the other hand, they are an opportunity for the integration of incomes in agriculture, especially during periods of stagnation or reduction in commodity prices, avoiding abandonment phenomena.

The research assistance activity will follow the following phases:
1. Collection and analysis of the existing bibliography on renewable and non-renewable energy sources, elaboration of a summary scheme;
2. Collection and analysis of the existing bibliography on relations between renewable sources and the agricultural sector and preparation of a summary scheme;
3. Recognition of existing sources and collection of data on energy from renewable sources in terms of production and consumption;
4. Critical analysis of the methods used in the literature for the processing of the collected data referred to in the previous point;
5. Verification of the possible quantification (or identification of any indicators) of strengths and weaknesses for each single component of renewable energy (solar, wind, biomass ...);
6. Identification of the most appropriate analysis method(s) for the description of the relationships between renewable energies and the agricultural sector;
7. Construction of a case study.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Have passed the following exams:
1. An exam of advanced statistics or econometrics at second degree level
2. An exam of advanced quantitative methods for economics or finance at second degree level
3. An exam among the following: Commodity Markets, International Trade of Commodities, Economics of Rural Development, Economia e Gestione dell’Azienda Agraria e Agroindustriale

Advanced knowledge of Excel (including the use of filters, tables and graphs) and familiarity with R or Stata or Matlab.

TUTOR: Antonella Basso, M. Bruna Zolin (estimated start date: October 2019)

9. MICROECONOMIC NOTES

PROJECT DESCRIPTION
The Microeconomics I course lays the foundations for the study of prices, allocations, and their efficiency in a market economy. This course is preparatory to many others in the QEM-Economics curriculum of the Master's degree in Economics and Finance, such as Microeconomics II and Advanced, Macroeconomics I and II, and Advanced Public Economics. The objective of the project is to collaborate with the proposing professors in the preparation of notes and original exercises for the Microeconomics course. The course is currently taught in two consecutive modules by the proposing professors and has as teaching material both the text "Microeconomic theory" by Andreu Mas-Colell, Michael D. Whinston, Jerry R. Green and some notes and exercises written by the professors. The work required is to standardize the notes and exercises present, integrate them in collaboration with the professors, and typeset them in the scientific typesetting language LaTeX. The notes will be public with a Creative Commons license and will benefit future generations of Cafoscarini students in the QEM program.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Having passed with a good grade the first semester exams of the QEM-Economics curriculum within the Master degree in Economics and Finance. Being willing to learn the basics of the scientific typesetting programme LaTeX.

TUTOR: Pietro Dindo, Michele Bernasconi, (estimated start date: September 2019)

10. INVESTING IN A SMART GRID UNDER UNCERTAINTY: THE PROSUMER’S PERSPECTIVE

PROJECT DESCRIPTION
The fellow will support a research project aiming to evaluate i) the economic benefit that a prosumer of solar energy can derive from the exchange of energy with other agents present in the network and ii) its impact on his investment choices (plant capacity, investment timing, etc.). The fellow will be asked to collect data relative to buying and selling energy prices in the Italian electricity market. S/he will then test their consistency with respect to specific stochastic processes that are assumed to illustrate their diffusion. Further, in order to calibrate the theoretical model set up by the applicant, s/he will be asked to collect data relative to the installation costs of the technology to be purchased (photovoltaic system, devices for the smart node control unit, etc.). Once calibrated the model using the collected data, the fellow is expected to execute the final numerical exercise relative to the optimal investment choice.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Solid knowledge of Econometric and Statistical Methods. In addition, familiarity with the theory of option’s pricing would be appreciated. Practical ability in the use of i) a calculus software such as Mathlab or Maple and ii) an econometric software such as STATA, E-Views or SPSS.
11. NATURAL RESOURCES AND TERRITORIAL SUSTAINABILITY

PROJECT DESCRIPTION
In an increasingly frequent way, climate changes consequences, exacerbating the concerns of different regions and countries as an example within the European Union, require a deeper knowledge of existing local natural resources, of their strengths and weakness.

The aim of the research work is the reconstruction of the cognitive framework at different territorial levels through indicators (environmental, social, economic), necessary for identifying suitable sustainable strategies in a bottom-up perspective.

The research activity is developed in different steps:
1. collection and analysis of the existing bibliography on natural resources and construction of a summary scheme;
2. recognition of databases and collection of existing data of natural resources in different territorial areas;
3. critical analysis of the methods used in the literature for the processing of the collected data (see the previous step);
4. identification of the method(s) for processing the collected data and application hypotheses.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Have passed at least one of the exams in each of the following two lists:
1. Commodity Markets, International Trade of Commodities, Economics of Rural Development, Economia e Gestione dell'Azienda Agraria e Agroindustriale;

Knowledge of R or Matlab language and of territorial or primary sector issues.

12. THE GENDER GAP AND THE ITALIAN MATHEMATICAL OLYMPIAD

PROJECT DESCRIPTION
The student will support a research project aiming to analyse the causes of women’s representation in science. The project will include a field experiment to be run during the next year at the “Math Olympics” an annual competition organized by the Unione Matematica Italiana in several high schools. The student will be asked to design some questionnaire in Qualtrics, according to the guidelines given by the research team. The questionnaires will then be sent to the students enrolled in the schools participating in our research project. The student will have to manage relationships with the actors involved in the research project and provide a first basic analysis of the filled questionnaires. Depending on the advancement of the research project, the student will be asked to support the organization and management of interventions aimed to close the gender gap in women’s participation to the Italian Math Olympiad (as, for example, the implementation of monetary incentives for female students).

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Basic knowledge of statistical data analysis tools (Stata is preferred); minimal knowledge of Econometric and Statistical Methods and Methodology.

TUTOR: Paola Ferretti e Bruna Zolin (estimated start date: October 2019)

13. COME CONSIDERARE GLI EFFETTI OCCUPAZIONALI NELL’ANALISI COSTI BENEFICI

PROJECT DESCRIPTION
La questione degli impatti occupazionali di un determinato intervento pubblico è stata in generale tenuta fuori dal perimetro dell’Analisi Costi Beneficio. Per alcuni interventi, questa ipotesi è troppo restrittiva. Riduce la credibilità delle raccomandazioni formulate dall’analista, e più fondamentalmente rende le sue conclusioni fuorvianti.

Sulla base di lavori esistenti (uno per tutti: Bartik) si valuta come integrare gli impatti occupazionali nell’ACB, con debita considerazione per i rischi di doppio conteggio. Vanno considerati almeno il costo opportunità del lavoro, il beneficio legato alla soppressione dello stigma legato alla disoccupazione e impatti indiretti sulla salute delle persone.
14. THE USE OF MONTE CARLO SIMULATION IN SOCIO ECONOMIC STUDIES: A TASTE OF SCIENCE?

PROJECT DESCRIPTION
Monte Carlo has emerged as one of the most straightforward and powerful tools for probabilistic simulation in many fields. Socio economic studies have been touched by this phenomenon so that nowadays one can find a number of published applications that defies precise quantification but can probably be counted in hundreds. Yet, to our best knowledge, no reflection on the use, and possible misuse, of this technique has been performed to day at least in the economics field (a somehow similar attempts exist for environmental sciences: (Ferson 1996). A possible cause is that the numerosity of the applications defies any reasonable attempt of exhaustive metaanalysis. The purpose of the proposed activity is to address this gap based on a selection of 20 papers that cover the various typologies of documents (published articles, reports) and a large set of topics. Our purpose is to investigate the use of Monte Carlo by economists, and to identify possible misuses, linked for instance to arbitrariness in the selection of deterministic vs. stochastic variables, in the selection of given distributions or distribution parameters.

Il tema è particolarmente focale per le attività del centro VERA. La collaborazione si inserisce in un progetto d’articolo, accettato per una special issue della rivista Öconomia (classificata ANVUR) e oggetto di un probabile congresso a Parigi in primavera 2019. In caso di contributo serio e continuativo (fino al termine della pubblicazione) dello studente, potrà apparire come co-autore della pubblicazione.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Knowledge of statistics, ability to reflect, interest for economic modelling.

TUTOR: Jèrôme Massiani

15. BANK FAILURES AND TEXT-MINING

PROJECT DESCRIPTION
We plan to analyse some articles of Sole 24 Ore from 2009 to 2016 to study texts covering the bank failures occurred in Veneto. In some detail, we aim at investigating the intensity of media coverage and the language that was used (presumably, “mismanagement” at inception and “fraud” at the end of the period). We may also analyse the official reports on the crisis that were produced by the Italian parliament or Regione Veneto.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Working knowledge of R and some packages for text-mining (tm or quanteda, for example); alternatively, some previous experience in python may be considered; candidates having some familiarity with data-mining, programming languages and previous involvement as tutors will be preferred.

TUTOR: Paolo Pelizzari

16. LEARNING ANALYTICS: ANALYSING DATA TO IMPROVE LEARNING PROCESSES

PROJECT DESCRIPTION
We aim at:
• Analysing and defining learning analytics, i.e. the systematic investigation of data generated by elearning systems or learning platforms for online courses.
• Studying a concrete dataset generated by one course on moodle.unive.it (log file)
• Writing some R instructions to analyse/visualize the data and a user-guide to allow other users to explore the data.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Working knowledge of R and some packages for data-mining, data manipulation, visualization and data-analysis; alternatively, some previous experience in python may be considered; high GPA with at least 18 CFU in statistics, mathematics, data-analysis and computer science; candidates with some familiarity with programming languages and previous involvement as tutors will be preferred.

TUTOR: Paolo Pelizzari

17. META-HEURISTIC GLOBAL OPTIMIZATION ALGORITHM FOR MONEY AND FINANCIAL MARKET ANALYSIS

PROJECT DESCRIPTION
When we face the problem of global optimization, and we are not usually able to obtain an analytic solution, we are forced to resort to numerical methods. Several metaheuristics have been proposed in the literature and the main approaches could be connected with biology and physics. The biology-inspired algorithms mimic the evolution of species (Genetic Algorithm) or the behavior of large group of animals (for instance the Particle Swarm and Ant Colony algorithms). On the other hand the “physics” metaheuristics are linked to physical laws (for instance the gravitational law or electromagnetism-like algorithm).

The objectives of the internship can be summarized in the following four steps:
First: exhaustive research on the metaheuristic algorithms proposed in the literature.
Second: review of the R libraries for the global optimization algorithms and their functions.
Third: implementation of one or more optimization algorithms not yet implemented in R.
Fourth: application of the implemented algorithms in money and financial market analysis.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Knowledge of R or other object-oriented programming language

TUTOR: Claudio Pizzi (estimated start date: September 2019)

18. MEASURING AND EXPLAINING INEQUITY AND DISCRIMINATION IN DISABILITY BENEFIT RECEIPT

PROJECT DESCRIPTION
The research project aims at measuring and explaining inequity in older people access to disability benefits, building on the evidence that personal characteristics unrelated to eligibility do appear to influence receipt. This might reflect inequalities in application for the benefit, or discrimination in benefit awards, and a first research aim is disentangling the two. The second, to test whether (local) public budget constraints explain take-up. The research assistant will provide support with respect to a) systematic literature review; b) exploratory analysis of possible data sources and application procedures for geographical indicators to be obtained under special license; c) data cleaning and preliminary analysis.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Preferably, students enrolled in the master degree in Economics and Finance (any curriculum, second year)

TUTOR: Francesca Zantomio (estimated start date: October 2019)

19. TESTING THE IMPACT OF PENSION REFORMS ON THE ATTAINMENT OF THE CAPITAL MARKETS UNION. A LEXIMETRIC APPROACH

PROJECT DESCRIPTION
The main contribution of this project is twofold. First, it strives to measure cross-national and intertemporal variations in the content of legal rules, thereby facilitating statistical analysis of legal systems and their social and economic impacts concerning personal pension products. Second, it investigates the opportunity for efficiency gains relating to the portability of social and pension rights (i.e. through opportunities for risk diversification as well as for competition and innovation). Such analysis eventually examines how a European harmonised pension product relates to the overall creation of the capital markets union.
We intend to develop a savers’ protection index for four countries (Germany, France, Italy and Spain) and code the development of the law for over three decades. This quantification of legal rules (“leximetrics” approach) allows for comparing variations across time series and across legal systems. The index traces how savers’ protection in the selected countries has developed over a period of three decades. Using such index, various interesting questions can be addressed: i.e., it can be asked which country scores the maximum on our savers’ protection index; how much these legal systems have changed over the years; and whether the laws of the four countries are converging or diverging.

The index will include variables which are used as proxies for savers’ protection. The proxies are the following:
- Information provision
- Investment choices and options (link between accumulation and decumulation strategies)
- Guarantees (i.e. regulated, flexible, biometric and financial)
- Caps on cost and charges (i.e. regulated, flexible, …)
- Switching and transfer of funds options

Those variables have been chosen as meaningful by elaborating upon previous literature and recasting and developing proxies on savers’ and consumer protection. In examining and coding the legal rules we will take into account the fact that different legal instruments can be used to achieve a similar function. Therefore, the introduction of additional detailed sub-variables might be considered at a later stage, if needed to adequately account for variations within and across the selected legal systems.

This comparative quantitative analysis of legal instruments will be accompanied by using EUROSTAT statistical data and the EIOPA Database of pension plans and products in the EEA.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Full proficiency in EN, Ability to use economic and legal methodologies and analytical analysis.

TUTOR: Andrea Minto (estimated start date: September 2019)

20. CRYPTOCURRENCY ECONOMETRICS

PROJECT DESCRIPTION
The aims of the research is to provide a review of the cryptocurrencies currently available on the market and of the quantitative methods used in modelling and predicting cryptocurrencies. The research aims at developing a suitable econometrics framework for pricing and predicting cryptocurrencies. The analysis will be conducted by using econometrics and statistical software and a final report will be written where methods and results are presented and discussed.

PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION
Having a Master degree in Economics; having passed with a good grade the exams of Econometrics; some basic knowledge of cryptocurrency markets is preferential.

TUTOR: Roberto Casarin, Domenico Sartore (estimated start date: July 2019)