



Università  
Ca' Foscari  
Venezia

**Dipartimento  
di Economia**

VERA/ACADEMY

## **VII EDITION - CALL FOR SELECTION OF N. 12 VERA INTERNSHIP GRANTS AT THE DEPARTMENT OF ECONOMICS - A.A 2021/2022**

### **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 students enrolled in its Master's Degree Courses internship projects to promote the development of professional and research skills useful for their orientation and subsequent labor market integration.

1.2 Twelve grants are available. The maximum duration of the internship periods will be 4 months and a commitment of about 300 hours that will be agreed with the tutor of the project. The internships will take place between January and June 2022. The total funding for each internship will be € 1.843,31 (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. Due to the COVID-19 emergency, internships can take place remotely, working from home.

1.4 On 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.

### **Art. 2 – Admission requirements**

2.1 The call is reserved for students regularly enrolled in the Department of Economics Master's Degree Courses.

2.2 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 14 (maximum of 12 with grants and maximum of 2 without grants), therefore the acceptance of internship applications "without grant" should be subject to the compliance of such limits.

2.3 These requirements must be met by the deadline indicated in the following art.3. Please note that the student status must be held also at the moment of grant acceptance and on the start date of the internship.

### **Art. 3 – Applications**

3.1 Applications must be submitted no later than **20<sup>th</sup> December 2021 at 12.00** by one of the following procedures:

- a) sending to the following Address of Certified Electronic Mail (CEM): [protocollo@pec.unive.it](mailto: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;
- b) sending by ordinary e-mail to the following address: [centro.vera@unive.it](mailto:centro.vera@unive.it). Documents must be attached in PDF format only;

3.2 The application form must include also the following documents:

- Dated and signed Curriculum vitae
- Self certification of exams taken (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 (the motivation letter 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).
- 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 will be formulated on the basis of the following criteria:

- weighted average exam marks;
- numbers of University credits (*CFU, Crediti Formativi Universitari*);
- 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 Applications from candidates that were beneficiaries of the VERA grant in the previous call will be accepted but in the selection procedure priority will be given to candidates that never received the VERA grant.

4.3 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

#### **Art. 5 –Ranking list**

5.1 At the end of the evaluation process, the Commission will draw up a ranking list in order of decreasing scores of each candidate.

5.2 The ranking list will be published on the web site of the Department of Economics at the following web address [www.unive.it/vera](http://www.unive.it/vera), Vera Academy section, after 10<sup>th</sup> January 2022.

#### **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 have to send their acceptance (via e-mail to the following address: [centro.vera@unive.it](mailto:centro.vera@unive.it)) within 5 days from notification. If a candidate turns down a grant, it will 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.

6.4 The assignment of Internship grants is subject to the possession of student status at the beginning of the internship period.

#### **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. 2.2)

#### **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](mailto: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. Michele Bernasconi

Person in charge of the procedure  
Ing. Silvia Lovatti

## **ANNEX A**

### **1. COMPUTABLE GENERAL EQUILIBRIUM MODELS FOR THE CONSTRUCTION OF LONG-TERM MACROECONOMIC SCENARIOS**

#### **PROJECT DESCRIPTION:**

This activity is based on the development of specific competences, referring to the class of models CGE (Computable General Equilibrium), in terms of both theoretical foundations, as well as of available software tools (GEMPACK/RunGTAP, GAMS, CGEBox). Subsequently, this class of models will be assessed for the development of multisectoral macroeconomic long-term scenarios. The work could serve as a basis for thesis writing, as well as for possible future scientific collaborations on research projects (in particular, in the European project NEXOGENESIS).

#### **PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION:**

Having passed all macroeconomics exams included in the study plan. Familiarity with math/statistical software and spreadsheets (e.g., Excel).

TUTOR: Roberto Roson (estimated start date: January 2022)

NUMBER OF STUDENTS: 2

### **2. WOMEN'S LABOUR MARKET ADJUSTMENTS TO MATERNITY**

#### **PROJECT DESCRIPTION:**

The research project aims at exploring how working women adjust to maternity, in the context of the wider literature on the so-called "Maternity/Child penalty", exploring different margins of adjustment including working hours as well as job characteristics. The research assistant will provide support with respect to a systematic literature review and analysis of appropriate survey questionnaires modules relevant to empirical analysis. The research assistant might also conduct some basic data analysis with STATA.

#### **PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION:**

Excellent knowledge of the English language (in particular with regard to reading and comprehension). Basic knowledge of STATA software.

TUTOR: Francesca Zantomio (estimated start date: between January and March 2022)

NUMBER OF STUDENTS: 2

### **3. ESG AND RISK PROFILES**

#### **PROJECT DESCRIPTION:**

The aim of this research is to analyze the behavior of ESG investments throughout the volatile period that has characterized all markets during this crisis.

Specifically the research questions to be addressed are

- Do ESG investments behave any differently to other types of investments?
- Which dimension of risk is the most affected and which the least affected?

The research will focus on two or more markets with the aim of highlighting similarities and differences in the ways they reacted to the pandemic crisis with specific emphasis on their risk profile.

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:**

Exams in Mathematics, Statistics, Econometrics. Competencies in statistical data analysis, and quantitative methods.

TUTOR: : Diana Barro – Michele Costola (estimated start date: January 2022)

NUMBER OF STUDENTS: 1

### **4. ROBO-ADVISORY AND THE ROLE OF RISK PROFILING**

#### PROJECT DESCRIPTION:

Recently technological advancement and large availability of data paved the way the development of new resources in the personal wealth management with the goal of reducing the human role in the financial advice for wealth management (robo-advisory). Risk profiling is a key element of the process. 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 with reference 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:

Exams in Mathematics, Statistics, Econometrics. Competencies in statistical data analysis, and quantitative methods.

TUTOR: : Diana Barro (estimated start date: January 2022)

NUMBER OF STUDENTS: 2

### **5. 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. Update of the bibliography previously collected;
2. Recognition of any "new" sources and data on renewable energy sources in terms of production and consumption;
3. Relationship between renewable energy sources, recent EU guidelines and international energy agreements;
4. Deepening of the critical analysis of the methods and models used in the literature for the processing of data on renewable energy;
5. Exploration of new models for the impacts deriving from renewable energies with a focus on the agricultural sector.

#### 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

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

TUTOR: : Antonella Basso – Maria Bruna Zolin (estimated start date: January 2022)

NUMBER OF STUDENTS: 1

### **6. STUDY OF THE EFFECTS OF THE CORONA-VIRUS ON THE WORKING AND RETIREMENT CHOICES RELATED TO GENDER, MAKING USE OF OCCUPATIONAL CODING**

#### PROJECT DESCRIPTION:

Supporting research on the effects of the Corona-virus pandemic in Europe on the working and retirement choices based on microdata. The role of gender and occupational characteristics (coded according to ISCO-codes). Contributing to a final report on the research also focusing on gender differences.

**PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION:**

Being familiar with programs such as STATA and with quantitative analysis

TUTOR: : Agar Brugiavini, Elena Buia, Danilo Cavapozzi, Irene Ferrari (estimated start date: January 2022)

NUMBER OF STUDENTS: 2

## **7. FORECASTING TOURISM FLOWS**

**PROJECT DESCRIPTION:**

Accurate tourist flow forecasting is always the most important issue in tourism industry. The aim of the research is:

- to review the literature on the use of big data for decision support in the tourism sector;
- analyze big data following various methods including network analysis;
- to forecast tourism flows by applying time series models;
- to write a final report where methods and results are presented and discussed

**PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION:**

Knowledge of coding in R (or Matlab and Python), statistical data analysis, high average grade in statistics, mathematics and econometrics;

TUTOR: : Roberto Casarin, Nicola Camatti (estimated start date: January 2022)

NUMBER OF STUDENTS: 2

## **8. ENSEMBLES OF RANDOM REGRESSION TREES**

**PROJECT DESCRIPTION:**

Modelling multivariate data in the economic and financial domain has captured considerable attention in the economic and financial literature of the latest years. The aim of this project is to develop non-parametric regression models based on ensembles of random trees, possibly within a Bayesian framework. The research assistants are required to build an up to date literature review, and possibly build a data-base providing some data analysis.

**PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION:**

Candidates should have passed the exams of Statistics and Introduction to Econometrics with a grade no less than 26/30. They should be familiar with the basics of one of the most popular programming languages in data science, such as R, Python or, to a lesser extent, Matlab.

TUTOR: : Roberto Casarin, Stefano Tonellato (estimated start date: January/February 2022)

NUMBER OF STUDENTS: 2

## **9. ROBUST LOGISTIC REGRESSION FOR SMEs DEFAULT PREDICTION**

**PROJECT DESCRIPTION:**

Predicting SMEs default and financing promising firms means protecting 99% of all enterprises in the EU, as well as the largest part of the European value added and jobs. Accordingly, there is a vast literature studying SMEs default in European Countries, mainly based on accounting indicators. Logistic regression is the benchmark model for classification of default, due to remarkable performances comparable with those of

machine learning methods, with an immediate interpretability. The goal of this project is to apply Robust Logistic Regression to predict SMEs default in Italy as well as in other European countries.

The fellow will have to:

- Carry out a comprehensive bibliographic research on SMEs default prediction;
- Create a large dataset of balance sheets downloaded from Orbis-BvD database
- Use the available libraries in R/Matlab for applying Robust logistic regression to classify defaulted firms within the collected data, with possible modifications of the functions;
- Compare the classification rates, the significance and relevance of the coefficients with the standard logistic regression outcome and possibly with ML methods
- Contextualize the results within the relevant literature

**PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION:**

Having a solid background in data management, statistics/ econometrics or data analysis and preferably having passed an exam of accounting/ financial statement analysis. Being familiar with programming in R/Matlab. Being familiar with data download from specialized providers and with their management and processing. Excellent knowledge of the English language.

TUTOR: : Lisa Crosato (estimated start date: between January and June 2022)

NUMBER OF STUDENTS: 2

## **10. THE POND'S DILEMMA IN THE PRESENCE OF AFFIRMATIVE ACTION: THEORETICAL AND EXPERIMENTAL ANALYSIS**

**PROJECT DESCRIPTION:**

The student will participate in a research project whose main objective is the study of how preferences, individual abilities and incentives affect the choice of competition of men and women in the presence of gender quotas. Previous studies focusing on the self-selection of candidates into competitions have identified the existence of the so-called "ponds' dilemma", i.e. whether one prefers to be "a big fish in a small pond or small fish in a large pond". The object of this project is linked to these studies because we want to consider the potential "ponds dilemma" that can emerge when stigma and potential future discrimination can be associated with having obtained a prominent position thanks to the presence of a gender quota. The fellow will be required to write a review of the literature on the Ponds' Dilemma. Depending on the progress of the research project, the fellow may participate in the implementation of the experimental study and in the analysis of the data generated.

**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. The students must have attended at least a course in statistics or econometrics.

TUTOR: : Luca Di Corato (estimated start date: 24 January 2022)

NUMBER OF STUDENTS: 1

## **11. CULTURAL DYNAMICS AND ACCULTURATION IN STRATEGIC ENVIRONMENTS**

**PROJECT DESCRIPTION:**

The aim of the project is to simulate the dynamics of cultural traits in a social context characterized by the presence of strategic interactions. In the reference model it is assumed that cultural traits are transmitted from one generation to another and influenced by (i) socialization between agents when young; (ii) modification of the cultural trait to be transmitted as dependent on its use in strategic interactions; (iii) willingness to transmit a cultural trait in line with the experience in strategic interactions. The candidate will be asked to familiarize with the model and the main contributions in the reference literature, to write the code to simulate the dynamics of cultural traits, and to explore the dynamics for those cases in which analytical characterizations are not available. The results of the internship can be used as the basis for a dissertation.

**PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION:**

Being familiar with a programming language such as Python, Matlab, Octave,... and with the main concepts in Game Theory.

TUTOR: Pietro Dindo (estimated start date: January 2022)

NUMBER OF STUDENTS: 1

**12. STRUCTURE, EVOLUTION AND RESILIENCE OF INTERNATIONAL OPENING PROCESSES IN THE NORTH EAST ECONOMY**

**PROJECT DESCRIPTION:**

The aim of the research is to study the evolution of the processes of international openness of firms in Veneto and Friuli Venezia Giulia over the last 10 years, using micro-data on the import-export activities of firms (source: Istat) to be linked to balance sheet data (Aida). The main job consists of constructing indices of the international openness of firms based both on the complexity of their products and on the geographical distribution of their markets. The hypothesis is that product complexity and geographical spread are strategies that increase firms' resilience to exogenous shocks, such as the Covid-19 pandemic.

**PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION:**

Knowledge of the AIDA-Bureau Van Dijk database and at least a minimum competence in the analysis of micro-budgetary data on large scale archives.

TUTOR: : Giancarlo Corò (estimated start date: January 2022)

NUMBER OF STUDENTS: 2

**13. NATURAL RESOURCES, TERRITORIAL SUSTAINABILITY AND CIRCULAR ECONOMY**

**PROJECT DESCRIPTION:**

Pollution, wasted natural resources and climate change are just some of the pressing issues facing our society. The increase in population, production costs and pollution, now unsustainable, require the adoption of a new approach to the economy and everything that revolves around it.

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. Investigation and analysis of the existing bibliography on natural resources and construction of a summary scheme;
2. Survey 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 new methods 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 of the list: Optimization, Econometrics, Nonlinear Models and Financial Econometrics

and have passed at least one of the exams of the list: Commodity Markets, International Trade of Commodities, Economics of Rural Development.

Advanced knowledge of Excel, knowledge of R or Matlab language and of territorial or primary sector issues.

TUTOR: : Paola Ferretti e Maria Bruna Zolin (estimated start date: January 2022)

NUMBER OF STUDENTS: 2

#### **14. A REVIEW OF APPLICATIONS OF AGENT BASED MODELS IN [ENVIRONMENTAL] ECONOMICS**

##### **PROJECT DESCRIPTION:**

The candidate will carry out a research on bibliographic databases to create a catalogue of publications indexed and analysed with bibliometric tools aimed at characterizing the application field of agent models in economics, with focus on the environmental field and on the climate change sector. A specific objective will be to characterize the evolution of the IT tools used for their development and application.

##### **PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION:**

The candidate should preferably have introductory knowledge of software packages such as R or Matlab and of bibliometric tools such as Bibliometrix of the R package

TUTOR: : Carlo Giupponi e Animesh K. Gain (estimated start date: January 2022)

NUMBER OF STUDENTS: 2

#### **15. INFORMATION AND DISINFORMATION IN FINANCIAL MARKETS**

##### **PROJECT DESCRIPTION:**

The stage will be devoted to the analysis of information and disinformation in financial markets and to the exploration of a computational model to gauge the success of sub-populations of traders who use different “information strategies” (for instance, some may acquire and process costly information or forecast returns, whereas others may use uninformative (i.e., fake) signals or refrain from using any information altogether). In particular, we hope to provide a description of market configurations in which disinformation is endemic and persistent.

##### **PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION:**

Some knowledge of informational efficiency in financial markets and its paradoxes is helpful; familiarity with the conceptual setup of Grossman-Stiglitz (1980); please mention in the application the exams regarding financial markets and financial intermediaries that the candidate has attended; some programming skills are helpful but not strictly needed (the model runs in Netlogo and the artificial data that can be generated should be analyzed and visualized with a statistical package, preferably R).

Sanford Grossman, Joseph Stiglitz, (1980). On the Impossibility of Informationally Efficient Markets. American Economic Review, 70, 393-408.

TUTOR: : Paolo Pellizzari (estimated start date: January 2022)

NUMBER OF STUDENTS: 2

#### **16. FROM QUALITATIVE TO QUANTITATIVE ANALYSIS FOR CHART PATTERN RECOGNITION IN TECHNICAL ANALYSIS: AN ARTIFICIAL INTELLIGENCE BASED APPROACH**

##### **PROJECT DESCRIPTION:**

The main goal of the internship is to study how we can turn the qualitative analysis of the so-called “chartists” into a quantitative one by mean of Artificial Intelligence. The identification of graphic configurations on an asset price time series, typical of classical technical analysis, strongly depends on the trader's experience. It follows that even the possibility of defining a trading strategy is influenced by the trader's professional expertise and his cleverness to correctly identify signals from chart analysis.

Use of AI to pattern recognition should allow us to reduce this subjectivity and to quantify the similarity of the actual pattern to theoretical ones. The internship activity is organized into the following phases:

- review of literature on technical analysis and AI applied to pattern recognition problem
- design of an AI-based pattern recognition system to identify the most plausible graphic configuration
- implementation of the previous point using R or Python software.

##### **PREFERENTIAL QUALIFICATIONS/SKILLS TO SPECIFY IN THE LETTER OF MOTIVATION:**

Skill on R and/or Python; basic knowlodge on technical analysis

TUTOR: Claudio Pizzi (estimated start date: February 2022)

NUMBER OF STUDENTS: 2