



**Research fellowship on: *Dynamic Calibration of Time Series Models and Generalised Count Models with Dynamic Overdispersion* - Università Ca' Foscari Venezia (Italian law 30 December 2010, n.240, art. 22)**

The present document in English is to be considered as a mere summary of the main provisions of the notice of competition which is available in Italian at the following link: <http://www.unive.it/data/12137/> The text in Italian is the official text of the notice of competition for all legal intents and purposes and, in the event of non-conformity with the present document, it shall prevail.

#### **Description**

The Department of *Economics* at Università Ca' Foscari Venezia invites applications for a fellowship in:

- **Title:**

***Dynamic Calibration of Time Series Models and Generalised Count Models with Dynamic Overdispersion.***

- **Academic Discipline or disciplines specifically identified by the call** SECS-P/05;
- **scientific coordinator and tutor:** Prof. Monica Billio
- **duration:** 12 months

#### **abstract:**

Given the vast proliferation of dynamic models and forecasting techniques developed in the literature, the study of the possibility of reconciling forecasts from different models with different assumptions is of high relevance for both researchers and practitioners. The existing literature has investigated the problem combining models within a static framework without taking into account of the instabilities that can arise from the appearance over time of temporary non-linearities or breaks in the data series. This is a frequent problem often observed in the forecasting of financial data, in particular the volatility of assets and credit risk, as well as environmental data, such as wind direction and wind speed. Failing to take into account of this time heterogeneity while calibrating models can have large negative implications on systemic risk analysis, before and after periods of crisis, as well as on the assessment of the impact of climate change.

Moreover, the study of count data is of high practical relevance in many fields, such as Environmental Science, Finance, and more recently Epidemiology. Count processes can often be approximately modelled with continuous data process, with a more accurate approximation when the observed quantity is very large. However, often variables tend to oscillate between large and small quantities where for large periods of time the approximation fails. The speed at which these variables grow can also vary significantly over time, giving evidence of time-varying overdispersion. This can be seen for example in the duration of trades of illiquid stocks or in the occurrence of forest fires, which also exhibits evidence of periodic effects. Finally, the variation of environmental variables between recent dates can also vary drastically with more frequent occurrence of extreme events due to climate



change. The study of a general framework that takes into account of all these issues is of high practical and theoretical relevance..

### Who can apply

Prospective candidates are expected to hold a master's degree in the subjects of the research, or related disciplines.

Ca' Foscari encourages applications from researchers with positive evaluation in all the criteria in individual proposals such as Marie Skłodowska Curie Actions - Individual Fellowships/ERC Starting Grants/FIRB (Italian Fund for basic research investments)/SIR (Scientific Young Independence Research) or similar.

Researchers having successfully completed Marie Skłodowska Curie Actions - Individual Fellowships/ERC Starting Grants/FIRB (Italian Fund for basic research investments)/SIR (Scientific Young Independence Research) or similar funded projects are warmly encouraged to apply.

### Favourite headlines

- Holding a PhD;
- the conclusion of a PhD course whilst awaiting the award of the title
- at least 4 years of research activity in the subject matter of this call for proposals
- Specialization diplomas and certificates of attendance of postgraduate courses with research topics related to the object of the grant, obtained both in Italy and abroad, the performance of documented research activities at public and private entities with contracts, scholarships or assignments both in Italy and abroad with research topics related to the object of the grant

*Good knowledge of English will be evaluated during the interview.*

**Duration of contract:** 12 months, starting on October 2021.

**Stipend:** The research fellowship amounts to **Euro 24.426,00.=per year**, gross to the recipient, net of the expenses to be sustained by the Provider. The amount may be subject to adjustment in the event of variations in the law.

**Deadline for submission of applications: by and no later than 2021-09-06, h. 12:00 noon – local time.**

If the deadline is on Saturday or on holidays, the deadline is extended to the first working day thereafter.

**WARNING. Please note that the University is closed for the summer break from 07 to 15 August 2021. We recommend that you do not send applications during this period.**

### How to apply:

Candidates should submit:

1. The application form;
2. A motivation letter (max 1 page) along with their CV in European format, duly dated and signed, both to enclosed as a one single.pdf file. (<http://www.unive.it/pag/28830>)



3. A copy of a valid identity document (either Identity Card or Passport);
4. (If available) Evaluation Summary Reports of Marie Skłodowska Curie Actions - Individual Fellowships/ ERC Starting Grants/FIRB (Italian Fund for basic research investments)/SIR (Scientific Young Independence Research) individual proposals having passed all the evaluation thresholds;
5. Master's Degree or Old Master's Degree or equivalent foreign qualification;
6. If available, Doctoral degree;
7. Declaration on availability to held the interview in remote (<https://www.unive.it/pag/28830>) to be send via email at the following address: [simar@unive.it](mailto:simar@unive.it):
8. (If available) Details of Marie Skłodowska Curie Actions - Individual Fellowships, ERC Starting Grants, FIRB (Italian Fund for basic research investments)/ SIR Scientific Young Independence Research funded projects;
9. All documents, qualifications and publications relevant for the selection procedure (please, see the notice <http://www.unive.it/data/28825/>).

All the schemes of the quoted documentation are available on the website <http://www.unive.it/pag/28830>.

### How to submit your application

Applications should be submitted by the online procedure, available on the notice webpage <http://www.unive.it/data/28825/>

#### Or submit here:

<https://apps.unive.it/domandeconcorso-en/accesso/dec-billiogiannini-28072021>

The candidate, after the uploading, will receive a submission number and an e-mail acknowledging receipt of his/her application.

The candidate if necessary could access the procedures for updating any data and materials by the link provided by the e-mail, in any case any updates must be made no later than the deadline **2021-09-06, h. 12:00 noon – local time.**

If the deadline is on Saturday or on holidays, the deadline is extended to the first working day thereafter.

Please note that the University can be contacted for any support needs by the candidate until 24 hours prior to the deadline.

Please note that in case of an high number of applications and / or weight of the materials loaded by the candidates the system might become slower, Therefore it is suggested not to start the process close to the deadline.

**NB:** the University does not take on responsibility for wrong or late communication of addresses, nor for any communication problem not depending on the University.



Università  
Ca'Foscari  
Venezia

### **Evaluation**

Up to 100 points, specifically:

For qualifications, publications and possible tests, from 0 to 60;

For interview, from 0 to 40.

### **Selection procedure**

The interview will be held in remote only. Further details on how to connect online will be published alongside the convocation notice

The interview will be on **2021/09/16, at 10.00 AM.**

The short-list of the candidates admitted to the interview, or any postponement, will be published on the University's webpage on **2021/09/13** (<http://www.unive.it/data/28899/>).

### **Information and contacts**

Candidates may find further details about the application process and the research project in the official call published on the following webpage <http://www.unive.it/data/28825/>

For further information please contact: Segreteria Amministrativa del Dipartimento di Economia, phone number: 041-2349173; e-mail: [simar@unive.it](mailto:simar@unive.it)