

TEMPLATE FOR ADVERTISING RESEARCH POSTS

based on indications given by par. 4.4.1 of the

“Report of the Working Group of the Steering Group of Human Resources Management under the European Research Area on Open, Transparent and Merit-based Recruitment of Researchers”

Recruiting Department/Research Unit Economics and Law

Title: Calibration with machine learning and simulation of a large macroeconomic model

Offer description:

The assignee will have to extend an agent-based model (or models) calibrated on real data and built to represent the Italian macroeconomic system. In particular, the model will have to contain parameters on individual and/or category (production sector/institutional) agent behavior that can be calibrated with Machine Learning (ML) techniques in order to optimize out-of-sample forecasting performance on a set of macroeconomic variables. The assignee will carry out three main activities:

- (i) he/she will work on the theoretical definition of behavioral rules to be included in the behavior of agents (having bounded rationality) who will then select them with ML rules,
- (ii) he/she will program within the model the behavioral rules and ML, and
- (iii) he/she will evaluate the outputs of the simulations.

Researcher career profile:

- *R1 First Stage Researcher (up to the completion of PhD)*

For further details <https://euraxess.ec.europa.eu/europe/career-development/training-researchers/research-profiles-descriptors>

Location: Macerata, Italy

Type of contract:

- *temporary*

Job status

- *full time*

Expected start date and duration of the contract: 15 (fifteen) months. The exact start date will be provided after the selection process.

Annual gross salary: € 23.867,05

Selection criteria: Master's Degree in Economics

Preferential selection criteria:

1. Ph.D.

2. Research activities in the area of the fellowship activities and, in particular, in macroeconomic agentbased modelling.
3. Publications in the area of the fellowship activities.
4. Good knowledge of English language.
5. Very good knowledge of computer programming with softwares such as Matlab or Python.

Application deadline: 02/06/2024, 1 p.m.

Full details are available at: <https://www.unimc.it/it/ateneo/bandi-e-concorsi/finanziamenti-ricerca/bandi-assegni-ricerca>

Enquiries can be made to Ufficio Ricerca Scientifica e Dottorato – ufficio.ricerca@unimc.it

DISCLAIMERS

- The University of Macerata has adopted an OTM-R (Open, Transparent and merit-based Recruitment) policy within the framework of its Human Resources Strategy for Researchers; see <https://www.unimc.it/it/ricerca/hrs4r/la-policy-otm-r-open-transparent-and-merit-based-recruitment-of-researchers>
- The University of Macerata pursues an equal opportunities and diversity policy as well. Among facilities, a kindergarten is available for university's employees. Specific facilities and services are also dedicated to employees with disabilities (transportation services, specific technologies for studying).