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SETTORE RICERCA E TERZA MISSIONE



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Dipartimento
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Subject: Selection announcement for the awarding of no. 1 Research Assignments, pursuant to Art. 22-ter of Law no. 240 of 30 December 2010 – 2026_IR_02_DSS – “*Modeling and predicting financial risk measures with factor augmented models*” funded by the project Progetto di Sviluppo Dipartimentale Anno 2023 – 2027 - CUP code C93C23008730005 - Scientific Supervisor and Tutor: Prof. Massimiliano Caporin

The Director of the Department of Statistical Sciences

In this announcement, all positions, professions and titles related to functions performed and specified with regard to a gender should be understood as referring to all genders.

HAVING REGARD TO Law no. 168 of 9 May 1989;

HAVING REGARD TO the Statute of the University of Padua, published in the Official Gazette no. 300 of 27 December 2011, as subsequently amended and supplemented;

HAVING REGARD TO Law 240/2010 and subsequent amendments and additions, and in particular Art. 22-ter of the Law as amended by Law no. 79/2022 converting, with amendments, Decree-Law no. 45 of 7 April 2025, which introduced the Research Assignment;

Responsabile del procedimento amministrativo:
Stefano Davide Leone tel. 0498274178 e-mail stefanodavide.leone@unipd.it
Riferimento da contattare: tel. 049 827 4118 e-mail ricerca@stat.unipd.it

HAVING REGARD TO Ministerial Decree no. 592 of 6 August 2025 defining the minimum economic treatment for post-doc assignments and research assignments - Arts. 22-bis and 22-ter, Law no. 240 of 30 December 2010;

HAVING RECALLED the current Regulations for the awarding of Research Assignments pursuant to Art. 22-ter of Law 240/2010, issued by Rector's Decree No. 4508/2025 of 31 October 2025;

HAVING REGARD TO Legislative Decree no. 17 of 9 January 2008 concerning the admission of third-country nationals for scientific research purposes, as subsequently amended and supplemented;

HAVING REGARD TO the Code of Ethics of the University of Padua;

HAVING REGARD TO Presidential Decree no. 62 of 16 April 2013 "*Regulations containing the code of conduct for public employees, pursuant to Art. 54 of Legislative Decree no. 165 of 30 March 2001*", which extended, where compatible, the behavioural obligations of the code to all collaborators or consultants, regardless of the type of contract or assignment;

HAVING REGARD TO the resolution of the Council of the Department of Statistical Sciences of 18.09.2026 which approved the activation of no. 1 Research Assignments aimed at introducing young scholars to research and innovation, under the supervision of a Tutor to be carried out remotely and/or at the Department of Statistical Sciences under the supervision of Prof. Massimiliano Caporin, acting as Tutor;

HAVING ASCERTAINED the source of funding for the project "Modeling and predicting financial risk measures with factor augmented models" within the framework of the "Progetto di Sviluppo Dipartimentale Anno 2023 – 2027" of the Department of Statistical Sciences - CUP code C93C23008730005;

DEEMING IT APPROPRIATE to issue a selection announcement for the awarding of no. 1 Research Assignments aimed at introducing young scholars to research and innovation, under the supervision of the Tutor Prof. Massimiliano Caporin;

decrees

Art. 1 – Purpose

A selection is announced for the awarding of no. 1 Research Assignments, aimed at introducing young scholars to research and innovation, within the research project entitled **Modeling and predicting financial risk**

measures with factor augmented models to be carried out at the Department of Statistical Sciences and/or remotely under the supervision of Prof. Massimiliano Caporin, acting as Tutor.

The Research Assignment, with a duration of **12 months** and an annual gross amount, for the recipient, of **Euro 22,500.00** is announced in accordance with the current Regulations for the awarding of Research Assignments pursuant to Art. 22-ter of Law 240/2010 within the aforementioned research project, Scientific Disciplinary Group 13/STAT-02, Scientific Disciplinary Sector STAT-02/A Economic Statistic.

The Research Assignment, funded by the Progetto di Sviluppo Dipartimentale Anno 2023 – 2027 of the Department of Statistical Sciences, has as its object the carrying out of the research activity specified below:

- Conduct a systematic literature review on factor-based matrix models and multilevel models;
- Assist in developing approaches and methods for extracting factors from matrix data derived from high-frequency data;
- Assist in developing predictive models for financial risk measures that incorporate the previously extracted factors;
- Assist with empirical analyses using data from North American stock markets;
- Support the production of scientific outputs and dissemination activities aimed at academic and institutional audiences.

This project aims at developing a novel econometric framework for forecasting financial risk measures by combining matrix-valued time series models, multi-level factor structures and high-frequency realized risk indicators. The motivation arises from the limitations of existing univariate and multivariate approaches when applied to large cross-sections of assets, where the number of realized predictors (realized variances, quantiles, tail expectations, skewness, kurtosis) grows rapidly and standard regression methods suffer from dimensionality and collinearity issues.

The proposed framework organizes realized measures into matrices, with rows indexing different risk indicators and columns indexing assets or portfolios. Bilinear and additive matrix autoregressive (MAR) models are used to capture the temporal propagation of shocks along both dimensions in a parsimonious way. Multilevel factor structures are embedded within these matrix dynamics to extract a small number of interpretable latent components summarizing common movements across rows, columns or data-driven clusters.

Moreover, it has required the knowledge of methods and models for the analysis of economic and financial time series, dynamic models, and latent factor models. Proficiency in at least one programming language among Python, R, or Matlab. At least a basic understanding of methods and models for financial risk management. At least a basic understanding of the economics of financial markets.

Art. 2 – Admission requirements

Young scholars who hold of a master's degree in one of the following degree classes: SCIENZE STATISTICHE (LM-82), SCIENZE DELL'ECONOMIA (LM-56), SCIENZE ECONOMICOAZIENDALI (LM-77), FINANZA (LM-16), SCIENZE STATISTICHE, ATTUARIALI E FINANZIARIE (LM-83), obtained no more than six years ago and have a curriculum suitable for assisting in the performance of research activities are eligible to participate in the selection process.

The qualifications must be held on the announcement deadline date.

If the diploma was obtained abroad, it must be declared equivalent, for selection purposes only, to the master's degree or single-cycle master's degree by the Selection Committee.

Research Assignments, pursuant to Art. 22-ter of Law no. 240 of 30 December 2010, may not be awarded to those who are in one or more of the following situations:

- those who have held contracts referred to in Article 24 of Law 240/2010;
- permanent staff, employed on a permanent basis, of universities, public research bodies and institutions whose scientific specialization diploma has been recognized as equivalent to the PhD pursuant to Article 74, fourth paragraph, of Presidential Decree no. 382 of 11 July 1980;
- those who have a degree of kinship or affinity, up to and including the fourth degree, with a professor or researcher belonging to the Department proposing the selection or with the Rector, the Director General or a member of the University's Board of Directors;
- have already benefited from Research Assignments referred to in Art. 22-ter of Law 240/2010 as amended by Law no. 79/2022 for a period which, added to the duration of the assignment provided for in the announcement, exceeds a total of 3 years, even if not continuous. For the purposes of the duration of the aforementioned

relationships, periods spent on maternity or paternity leave or for health reasons according to current legislation are not relevant.

The total duration of relationships established with holders of positions referred to in Articles 22 - (Research Contracts), 22-bis (Post-doc Assignments), 22-ter (Research Assignments) and contracts referred to in Article 24 (RTT) of Law 240/2010, even with different universities, state, non-state or online, with institutions of higher artistic, musical and dance education, with institutions whose scientific specialization diploma has been recognized as equivalent to the PhD pursuant to Article 74, fourth paragraph, of Presidential Decree no. 382 of 11 July 1980, and with public research bodies may not in any case exceed 11 years, even if not continuous. For the purposes of the duration of the aforementioned relationships, periods spent on maternity or paternity leave or for health reasons according to current legislation are not relevant.

Candidates are admitted to the selection with reserve.

The Structure that issued the announcement may order at any time, by reasoned decree of the Director, the exclusion from the selection for lack of the required requisites.

Art. 3 – Submission of application

The application to participate in the selection, as well as the qualifications held, documents, publications and all attachments deemed useful for the selection procedure, must be submitted, under penalty of exclusion, electronically, using the dedicated application, on the Pica platform page: <https://pica.cineca.it/unipd/>.

The application can be completed starting from 1:00 PM (Italian time) on 30.09.2026 and must be submitted by 1:00 PM (Italian time) on 21.11.2026.

For registration, completion, signature and submission of the application, candidates must comply with the provisions of the **Guidelines for completing applications - Research Assignments** (Annex 1 - Guidelines), which form an integral and substantial part of this announcement.

The lack of signature and/or identity document is grounds for exclusion from the selection process.

The candidate may also access the procedure for completing the application for participation through identification via the SPID system (Public Digital Identity System). In this case, it will not be necessary to sign the application form.

The submission of the application to the Department of Statistical Sciences takes place automatically with the final closure of the online procedure. Therefore, no delivery or shipment of paper material should be carried out.

Candidates whose applications have not been submitted within the deadline or have been submitted in a manner other than that indicated above are not admitted to the selection.

The application must be accompanied by:

1. copy of a valid identity document in .pdf format;
2. scientific-professional curriculum vitae in .pdf format;
3. qualifications and publications relevant to the selection;

The application form is to be considered, for all legal purposes, as a self-certification pursuant to Articles 46 and 47 of Presidential Decree 445/2000 and subsequent amendments and additions, with regard to the data contained therein and the attached documents.

Those coming from non-EU countries in possession of a valid residence permit may use substitute declarations according to the procedures provided for EU citizens, if it is a matter of declaring states, facts and personal qualities that can be certified or attested by Italian public entities or if the production of substitute declarations is made in accordance with international agreements between Italy and the declarant's country of origin.

Those coming from non-EU countries not in possession of a regular residence permit may use the online procedure for uploading qualifications in .pdf format and certificates, issued by the competent authorities of the of their Country of citizenship, accompanied by a translation into Italian authenticated by the Italian consular authority which certifies their conformity to the original. The originals of these documents must be exhibited to the Committee during the interview, where applicable, and in any case, produced to the Structure upon any conferral of the assignment.

Candidates with recognized disabilities, pursuant to Law no. 104 of 5 February 1992, must specify in the application the necessary assistance in relation to their status, as well as any need for additional time for the interview, where applicable.

Any information or clarifications regarding the application process may be requested from the Structure (telephone number +39 049 8274118, email ricerca@stat.unipd.it).

For technical issues only, please contact the support service via the link at the bottom of the page: <https://pica.cineca.it/unipd>.

The candidate undertakes to notify any changes to the contact details provided in the application.

Art. 4 – Selection procedure

The selection is carried out through the comparative evaluation of qualifications, scientific-professional curriculum, scientific productivity and an interview by a Selection Committee appointed by the Director of the structure. The Selection Committee shall be composed of three effective members, including the Scientific Supervisor and/or the Tutor, and at least one substitute member.

For the comparative evaluation of candidates, the committee has 100 points at its disposal, of which:

- **20 for qualifications:** degree, PhD, specialization diploma, certificates of attendance of post-graduate specialization courses (obtained in Italy or abroad);
- **20 for the scientific-professional curriculum:** documented research activity carried out at public and private entities with contracts, scholarships or assignments (both in Italy and abroad) relevant to the research activity subject of the announcement;
- **20 for scientific productivity:** quantity and quality of scientific publications, including master's or single-cycle master's or doctoral theses;
- **40 for the interview.**

The date of the interview is set for the day 05.11.2026 at 10.00 at the meeting room of the Department of Statistical Sciences, Via Cesare Battisti, 241, 35121 Padova.

The absence of the candidate at the tests will be considered as a withdrawal from the selection, regardless of the reason.

In order to attend the interview, candidates must present a valid identity document in accordance with current legislation.

At the end of the selection process, the Committee formulates a provisional overall merit ranking based on the total scores obtained by candidates in the individual tests.

In order to be included in the ranking, candidates must achieve an overall score of not less than 60 points. In case of equal merit, preference is determined by the younger age of the candidate.

Selection documents and the related general merit ranking are approved by Decree of the Director of the Structure and published on the Official University Register.

Art. 5 – Stipulation of the contract

Research Assignments are awarded through specific private law contracts stipulated with the Structure that issued the announcement.

The contract contains the specific functions, rights and duties related to the position, the tasks and main research activities assigned, the economic and social security benefits due.

The Structure will communicate to the winner of the selection the date by which, under penalty of forfeiture, the relative contract must be stipulated.

The research activity cannot be started before the stipulation of the relative contract, which normally takes effect on the first day of the month following the signing of the contract.

The Research Assignment does not constitute a subordinate employment relationship and does not give rise to any rights regarding access to university roles.

Payment of the Research Assignment is made in deferred monthly installments.

Art. 6 – Rights and duties

The holders of the Research Assignment collaborate in carrying out a specific research activity, or a research program or a phase of it, according to the general guidelines provided by their Tutor.

Research Assignments are not compatible with:

- attendance of degree courses, specialist or master's degrees, PhD or medical specialization, in Italy or abroad, except for the possibility of implementing specific European Union research funding programs within the framework of actions linked to the Marie Skłodowska-Curie program (MSCA);
- holding PhD scholarships, or other scholarships, for any reason awarded by national or foreign institutions, except in the case where these are aimed at international mobility for research purposes;
- Research Contracts referred to in Art. 22 of Law 240/2010;
- Post-Doc Assignments referred to in Art. 22 bis of Law 240/2010;
- Contracts referred to in Art. 24 of Law 240/2010 (RTD A), RTD B), RTT);
- other Research Assignments;
- the position of permanent staff, employed on a permanent basis, of universities, public research bodies and institutions whose scientific specialization diploma has been recognized as equivalent to a PhD pursuant to Article 74, fourth paragraph, of Presidential Decree No. 382 of 11 July 1980.

Failure to comply with the provisions of this article constitutes cause for termination of the contract, without obligation of notice by the University.

Art. 7 - Confidentiality and intellectual property

All data and information that is not already in the public domain that the holder of the Research Assignment will become aware of in carrying out the activity, which are subject to confidentiality agreements signed by the

structure in which he operates, must be considered confidential. The holder of the Research Assignment undertakes to maintain the confidentiality of such data and information.

The attribution of the right to obtain a patent for inventions made as a result of scientific research carried out using facilities and financial resources provided by the University, is generally regulated by the University's Patent Regulations.

Art. 8 - Tax, social security and insurance treatment

Research Assignments are subject, in tax matters, to the provisions of Article 4 of Law no. 476 of 13 August 1984, in social security matters, to the provisions of Article 2, paragraphs 26 and following, of Law no. 335 of 8 August 1995, in matters of compulsory maternity leave, to the provisions of the decree of the Minister of Labor and Social Security of 12 July 2007, published in the Official Gazette no. 247 of 23 October 2007, and, in matters of sick leave, to Article 1, paragraph 788, of Law no. 296 of 27 December 2006. During the period of compulsory maternity leave, the allowance paid by the National Institute of Social Security (INPS) pursuant to Article 5 of the aforementioned decree of 12 July 2007 shall be supplemented by the University up to the full amount of the remuneration for the Research Assignment.

The University provides for the payment of social security, insurance and tax contributions due on the contract in accordance with the provisions of the law in force.

The mission allowance of the holder of Research Assignment shall be paid from the funds of the Research Supervisor or from the funds of the hosting Structure in accordance with the procedures laid down in the University Regulations for missions.

Art. 9 - Verification of the Research Assignment holder's activity

At the conclusion of the year of activity, the holder of the Research Assignment must submit a report to the Director of the affiliated Structure, illustrating the activities carried out within the project and the results achieved. This report, accompanied by the opinion of the Research Supervisor and Tutor, will be evaluated by the Council of the Department.

Art. 10 – Safeguard rules

For matters not specified in this announcement, reference is made to the provisions contained in Law no. 240/2010 as subsequently amended and implemented, in the current Regulations for the awarding of Research Assignments pursuant to Art. 22-ter of Law 240/2010 of the University of Padua, and to current legislation.

The Structure reserves the right to verify the accuracy of substitute declarations of certifications or notarial deeds made by candidates pursuant to D.P.R. 445/2000, at any stage of the procedure. If the above-mentioned check reveals the untruthfulness of the content of the declarations, the declarant shall forfeit any benefits resulting from the provision issued on the basis of the untruthful declaration, without prejudice to the provisions of Art. 76 of D.P.R. 445/2000, concerning the penalties provided for by the Criminal code and special laws on the matter.

The person responsible for the procedure is the Administrative Secretary of the Department of Statistical Sciences, Dott. Stefano Davide Leone.

Art. 11 - Processing of personal data

The processing of personal data provided by candidates takes place in compliance with the provisions EU Regulation No. 679 of 27 April 2016 (General Data Protection Regulation - GDPR)

The complete privacy policy is available at the following link: <http://www.unipd.it/privacy>

This announcement is also translated into English for informational purposes only; for all legal purposes, only Italian version is valid.

Padua, *date of the registration*

The Director of the Department

Prof. Giovanna Capizzi

digitally signed pursuant to Italian Legislative Decree no. 82/2005

Firmato digitalmente da Giovanna Capizzi
Data: 28.09.2026 13:40:20 CEST