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Agenzia Nazionale di Valutazione del  
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Evaluation of Research Quality



Valutazione Qualità della Ricerca

# Evaluation of Research Quality 2011-2014 (VQR 2011-2014)

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## Criteria for the Evaluation of Research Outputs

### Group of Evaluation Experts

### for Area 13 - Economics and Statistics

### (GEV13)

November 2015



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## 1. Introduction

This document describes the organization of the Group of Evaluation Experts for the Economics and Statistics Area (from now on, the GEV) and the criteria the Group will use in evaluating research outputs. The document is divided in eight parts. Section 2 lists the *Settori Scientifico-Disciplinari*, the *Settori Concorsuali* and the ERC Sectors which are relevant for the GEV. Section 3 summarizes the internal operating rules of the GEV. Section 4 describes the evaluation criteria for the research products. Section 5 describes the peer review process and the guidelines for the selection of external reviewers. Section 6 describes the bibliometric criteria: the journal list, the ranking of journal articles, the treatment of selected Italian journals and of individual citations, and the comparison between bibliometric and peer review evaluation for a random sample of journal articles. Section 7 describes the evaluation criteria for specific products. Finally, Section 8 describes how the GEV plans to solve potential conflicts of interest between GEV members and authors of research products.

## 2. Delimitation of the GEV Area

The GEV will take care of the evaluation of the products submitted by researchers belonging to the *Settori Scientifico-Disciplinari* (SSD), *Settori Concorsuali* (SC) and ERC Sectors (ERC) listed in Tables 1-3.



<b>Area 13 - Economics and Statistics</b>	
Relevant <i>Settori Scientifico-Disciplinari</i> (SSD)	
SECS/P01	<i>Economia politica</i> (Economics)
SECS/P02	<i>Politica economica</i> (Economic policy)
SECS/P03	<i>Scienza delle finanze</i> (Public economics)
SECS/P04	<i>Storia del pensiero economico</i> (History of economic thought)
SECS/P05	<i>Econometria</i> (Econometrics)
SECS/P06	<i>Economia applicata</i> (Applied economics)
SECS/P07	<i>Economia aziendale</i> (Business administration and management)
SECS/P08	<i>Economia e gestione delle imprese</i> (Management)
SECS/P09	<i>Finanza aziendale</i> (Corporate finance)
SECS/P10	<i>Organizzazione aziendale</i> (Organization studies)
SECS/P11	<i>Economia degli intermediari finanziari</i> (Financial markets and institutions)
SECS/P12	<i>Storia economica</i> (Economic history)
SECS/P13	<i>Scienze merceologiche</i> (Commodity science)
SECS/S01	<i>Statistica</i> (Statistics)
SECS/S02	<i>Statistica per la ricerca sperimentale e tecnologica</i> (Statistics for experimental and technological research)
SECS/S03	<i>Statistica economica</i> (Economic statistics)
SECS/S04	<i>Demografia</i> (Demography)
SECS/S05	<i>Statistica sociale</i> (Social statistics)
SECS/S06	<i>Metodi matematici dell'economia e delle scienze attuariali e finanziarie</i> (Mathematical methods of economics, finance and actuarial sciences)

**Table 1. The relevant *Settori Scientifico-Disciplinari* (SSD) for Area 13**



<b>Area 13 - Economics and Statistics</b>	
Relevant <i>Settori concorsuali</i> (SC)	
13/A1	<i>Economia politica</i> (Economics)
13/A2	<i>Politica economica</i> (Economic policy)
13/A3	<i>Scienza delle finanze</i> (Public economics)
13/A4	<i>Economia applicata</i> (Applied economics)
13/A5	<i>Econometria</i> (Econometrics)
13/B1	<i>Economia aziendale</i> (Business administration and management)
13/B2	<i>Economia e gestione delle imprese</i> (Management)
13/B3	<i>Organizzazione aziendale</i> (Organization studies)
13/B4	<i>Economia degli intermediari finanziari e finanza</i> (Financial markets and institutions)
13/B5	<i>Scienze merceologiche</i> (Commodity science)
13/C1	<i>Storia economica</i> (Economic history)
13/D1	<i>Statistica</i> (Statistics)
13/D2	<i>Statistica economica</i> (Economic statistics)
13/D3	<i>Demografia e statistica sociale</i> (Demography and social statistics)
13/D4	<i>Metodi matematici dell'economia e delle scienze attuariali e finanziarie</i> (Mathematical methods of economics, finance and actuarial sciences)

**Table 2. The relevant *Settori Concorsuali* (SC) for Area 13**

	<b>Area 13 - Economics and Statistics</b>
	Relevant ERC Sectors (ERC)
SH1_1	Macroeconomics
SH1_2	Development, economic growth
SH1_3	Microeconomics, behavioural economics
SH1_4	Marketing
SH1_5	Political economy, institutional economics, law and economics
SH1_6	Econometrics, statistical methods
SH1_7	Financial markets, asset prices, international finance
SH1_8	Banking, corporate finance, accounting
SH1_9	Competitiveness, innovation, research and development
SH1_10	Organization studies: theory & strategy, industrial organization
SH1_11	Labour economics, income distribution and poverty
SH1_12	Public economics
SH1_13	International trade
SH1_14	History of economic thought and quantitative economic history
SH3_1	Environment, resources and sustainability
SH3_5	Population dynamics, aging, health and society
SH6_8	Social and economic history
PE1_13	Probability
PE1_14	Statistics
PE1_21	Application of mathematics in industry and society

**Table 3. The relevant ERC sectors (ERC) for Area 13**

### 3. Organization of the GEV

The GEV is organized as follows.

Coordinator: Graziella Bertocchi

Assistant: Giulia Rossi

### 3.1 Sub-GEV composition

Sub-GEV name and relevant research areas (SSD)	Coordinator	Members
<b>Economics and Economic History</b> SECS/P01 SECS/P02 SECS/P03 SECS/P04 SECS/P06 SECS/P12	Agar Brugiavini	Pier Francesco Asso Oriana Bandiera Sandro Brusco Giovanni De Fraja Maria De Paola Francesco Lippi Paolo Malanima Monica Pia Cecilia Paiella Fabiano Schivardi Marco Vivarelli
<b>Business Administration and Management</b> SECS/P07 SECS/P08 SECS/P09 SECS/P10 SECS/P11 SECS/P13	Salvatore Torrisi	Lino Cinquini Guido Corbetta Manuela De Carlo Franco Fiordelisi Alfonso Gambardella Tobias Kretschmer Carlos Larrinaga Marco Pagano Andrea Prencipe Roberta Salomone Lucio Sarno
<b>Statistics and Mathematical Methods for Decisions</b> SECS/P05 SECS/S01 SECS/S02 SECS/S03 SECS/S04 SECS/S05 SECS/S06	Francesco Bartolucci	Marco Alfò Giuseppe Cavaliere Salvatore Greco Elena Pesavento Elvezio Ronchetti Emanuela Rosazza Gianin

Table 4. Sub-GEVs, relevant *Settori Scientifico-Disciplinari* (SSD), coordinators and members



A member assigned to a sub-GEV can be reallocated, depending on actual needs as emerging during the evaluation process.

### **3.2 Assignment of research products to the GEV and within the GEV**

The assignment of research products to the GEV will occur according to the SSD of the author. On the basis of the SSD specified in the form associated with the product, the GEV may decide to assign the product to another GEV, if the content is found to be more appropriate to the latter; in this case the evaluation of the product is based on the criteria of the GEV of destination.

The assignment of research products to the members of the GEV in charge with their evaluation will occur according to the SSD indicated by the author in the form associated with the product. The SSD assigned to the product may differ from the author's SSD, since it refers to the GEV and, within the GEV, to the SSD which, according to the author, is more competent to evaluate the product. The GEV will divide research products by type of publication and by research area and will assign them to the appropriate Sub-GEV. The Sub-GEV Coordinator will assign them to two competent Sub-GEV members.

If a research product is assigned to more than one GEV (for instance since co-authors indicate different SSD belonging to different GEVs), the product will be evaluated according to the VQR Guidelines for the Groups of Evaluation Experts (Sub-section 3.2). If necessary, the Coordinators of the GEVs involved will constitute specific Inter-Area Consensus Groups.

### **3.3 Operating rules of the GEV**

The operating rules of the GEV are recalled as follows:

- a GEV meeting is called with an at least 15 days notice. The meeting is called by the Coordinator, who also sets the agenda;
- decisions within the GEV are made by simple majority rule among members who attend a meeting. In order to vote, physical presence is not required if presence is assured via web or phone connection. When it is necessary to vote on a specific point outside a scheduled meeting, votes are expressed electronically;
- the assistant assigned by ANVUR to the GEV attends the GEV meetings, with secretariat functions and without voting rights. At the end of each meeting, minutes and a synthetic report outlining the main decisions will be drafted, circulated among GEV members, approved by the Coordinator and the members, and then sent to ANVUR to be filed.



## 4. The evaluation of research products

The evaluation of products by the GEV follows the informed peer review methodology, which consists in employing different, and if possible mutually independent, evaluation methods, to be harmonized within the GEV, which ultimately remains responsible for the final evaluation.

The available evaluation tools are:

- Peer review evaluation by (normally two) external reviewers selected independently by two different GEV members.
- Direct evaluation by the GEV, which can conduct an internal peer review according to the same procedure described for external peer review (that is, two GEV members will be involved).
- Bibliometric analysis, to be conducted according to the procedure described below in this document (Section 6). Research products subjected to bibliometric analysis are not assigned *automatically* to the merit classes established by the *Decreto Ministeriale* (DM) and by the VQR Call. The allocation is instead based on the expert judgment of the GEV, which will employ any possible knowledge beside bibliometric indicators, such as the expertise of its members and the information described in forms associated with the products.

The GEV will evaluate journal articles (belonging to the GEV journal list, to be described below in Section 6.1) using bibliometric analysis.

All other products will be evaluated in (mostly external) peer review.

A random sample of journal articles will also be evaluated in peer review for comparison purposes.

## 5. Peer review evaluation

Each research product to be evaluated by peer review will be sent to two external reviewers, independently chosen by the two GEV members to whom the product was assigned.

Alternatively, a product will be evaluated within the GEV according to the same procedure, provided that the necessary expertise is available and that no conflict of interest is present.



## 5.1 The selection of external peer reviewers

The selection of external reviewers, among Italian and foreign scholars, given its essential goals in the public interest, follows the principle of honest institutional cooperation and is founded on the criteria of correctness, objectivity and impartiality.

Great attention will be devoted to maintaining the anonymity of the reviewers, both at the stage of preparation of the list of reviewers and at the operational stage of the evaluation. The results of the evaluation of individual products and the identity of the reviewers in charge will not be made public. A list with the reviewers' names will be published by ANVUR within 30 days of the publication of the VQR Final Report.

Reviewers will be selected among the most authoritative and scientifically qualified scholars and specialists in the disciplines relevant to the research products to be examined. They are expected to have been active in research during the period covered by the VQR.

Starting from the list provided by ANVUR, the GEV will prepare an updated list of external reviewers such to adequately satisfy the standards set by the GEV in terms of scientific quality and experience with evaluation. The list will be extended with new reviewers selected by the GEV. In particular, through the Sub-GEV Coordinators, the Coordinator will invite GEV members to suggest a significant number of experts who satisfy the required standards and are available for the evaluation. The GEV Coordinator will collect suggestions together with information about the reviewers' qualifications, as summarized in a specific proposal form, to be prepared by the GEV Coordinator and approved by the GEV.

It will be possible to extend the reviewer list throughout the evaluation procedure, on the basis of the needs that might emerge after the products are transmitted by institutions.

In order to reduce potential conflicts of interest, the GEV will employ, whenever possible, reviewers that are active in foreign universities and institutions.

Rather than internal reviewers chosen among GEV members, the GEV will preferably employ, whenever possible, external reviewers.

## 5.2 Peer evaluation

The evaluation by external or internal reviewers is based on an evaluation form to be prepared by the GEV, following ANVUR guidelines, together with instructions for reviewers. The evaluation form will allow the reviewer to assign a score to the three evaluation criteria established by the



DM and the VQR Call, that is, originality, methodological rigor, and attested or potential impact. The form will also include an empty space where a brief comment should be entered, to summarize a motivation for the answers provided to the questions. The GEV will translate the indications contained in the evaluation form into one of the five classes established by the VQR Call.

In case of non-converging evaluations by the reviewers, the Sub-GEV creates Consensus Groups with the task of proposing to the GEV the final score for the products under examination, using the consensus report methodology.

When peer evaluations are strongly diverging, the Consensus Group can also request the opinion of a third expert.

In case of conflict in the evaluation between the members of the Consensus Group, this group will be integrated with the sub-GEV Coordinator (or the Coordinator if the sub-GEV Coordinator was in charge with the product).

In any case, the GEV ultimately remains responsible for the final evaluation.

## **6. Bibliometric analysis**

### **6.1 The GEV journal list**

The GEV will apply bibliometric analysis to journal articles belonging to the GEV journal list.

The GEV journal list will be compiled by integrating the GEV journal list available from the 2004-2010 VQR with selected journals from three sources: the list provided by CINECA concerning the publication outlets of all Italian researchers in the Area for the period 2011-2014 and the databases provided by ISI Web of Science (WoS) by Thomson Reuters and Scopus by Elsevier.

The ISI WoS and the Scopus databases will be limited to the categories that are relevant for the Area. For ISI WoS, the Subject Categories (SC) which are relevant for the Area are: DI (Business), DK (Business, Finance), FU (Demography), GY (Economics), NM (Industrial Relations and Labor), PS (Social Sciences, Mathematical Methods), PE (Operations Research and Management Science) and XY (Statistics and Probability). For Scopus, the All Science Journal Classifications (ASJC) which are relevant for the Area are: 1400 (Business, Management



and Accounting – all, i.e., from 1400 to 1410), 1800 (Decision Sciences – all, i.e., from 1800 to 1804), 2000 (Economics, Econometrics and Finance – all, i.e., from 2000 to 2003), 2613 (Statistics and Probability) and 3317 (Demography).

Additional journals not belonging to the above listed categories may be also added if the GEV agrees on their relevance for the Area. In particular, the GEV journal list available from the 2004-2010 VQR already included selected journals from the following ISI WoS SC: AF (Agricultural Economics), JB (Environmental Studies), KU (Geography), NE (Public, Environmental and Occupational Health), PO (Mathematics, Interdisciplinary Applications), WY (Social Work) and YQ (Transportation).

The GEV will publish the revised journal list in the ANVUR web site and will solicit suggestions for further integrations and deletions.

For indexed journals in the final list, the GEV will collect 2014 bibliometric indicators by ISI WoS (in particular, IF, IF5Y and AIS) and Scopus (in particular, IPP, SNIP and SJR).

For all journals in the list, the GEV will also collect *h*-indices obtained from Google Scholar covering the period 2010-2014. Journals with a missing or zero *h*-index will not be included in the final list.

The GEV will divide the journal list into five non-overlapping sub-lists: Economics, Business Administration and Management, Economic History, Statistics and Mathematical Methods for Decisions, and General.

The missing values of the ISI WoS and Scopus bibliometric indicators will be imputed using bibliometric indicators (such as the *h*-index) available for the entire list of journals, or for a subset of it. Imputations shall be carried out separately for each sub-list.

## 6.2 The ranking of journals

Journal rankings will be determined separately for each journal sub-list.

For each separate sub-list the GEV will establish the ranking using an algorithm that combines information about journal impact from ISI WoS, Scopus and Google Scholar indicators. The algorithm will be such to rule out the possibility that an indexed journal is ranked less than a non-indexed journal with a lower *h*-index



The ranking procedure will be such to assure that the *ex ante* probability for a journal article to fall into one of the final classes corresponds to the one defined by the VQR Call, as follows:

- Excellent [top 10% of the distribution of international scientific products in the relevant sub-area]
- Good [10% - 30 % of the distribution of international scientific products in the relevant sub-area]
- Fair [30% - 50% of the distribution of international scientific products in the relevant sub-area]
- Acceptable [50% - 80% of the distribution of international scientific products in the relevant sub-area]
- Limited [80% - 100% of the distribution of international scientific products in the relevant sub-area].

An exception to the above procedure is represented by the General sub-list, which contains a very small number of general-interest scientific journals (e.g., Nature and Science) and will therefore be ranked separately.

### 6.3 Italian journals

Italian journals are defined by the GEV as journals that publish only papers in Italian or a mix of papers in Italian and other languages, journals published by Italian publishers, or journals published by international publishers on behalf of Italian institutions or associations.

Provided that fewer than 20-25 Italian journals are ranked within the top three classes defined by the VQR Call (that is, Excellent, Good and Fair), the GEV will upgrade by one class a number of Italian journals, distributed across all sub-lists, equal to 20-25 minus the number of Italian journals already ranked as Fair or above.

### 6.4 Individual citations

The GEV will upgrade by one class those indexed journal articles with a number of average annual citations (since publication), over the period 2011-2014, which is greater than the impact factor (measured by ISI WoS IF5Y or by Scopus IPP) of the corresponding journal in 2014.



The rule will be applied under the constraint that upgrades represent no more than approximately 1% of the journal articles under evaluation. If the number of upgrades exceeds this threshold, only those articles with the highest average annual citations will be upgraded.

If a journal is indexed both by ISI WoS and Scopus, the most favorable outcome will be applied.

No downgrade will be applied to indexed journal articles with a number of average annual citations (since publication), over the period 2011-2014, which is equal or smaller than the impact factor of the corresponding journal in 2014.

Since individual citations data are only available for indexed journals, the GEV will apply no upgrade or downgrade to articles in non-indexed journals.

Since the treatment of self-citations is still an object of debate within the scientific community, the GEV will not single out self-citations in the application of the above procedure.

### **6.5 Comparison between bibliometric analysis and peer review evaluation**

A random sample of at least 10% of the journal articles evaluated with bibliometric analysis, stratified by sub-list, will be also evaluated in peer review, in order to study the degree of agreement between the two methods.

The final evaluation of the sample journals will remain bibliometrical as for the other journal articles.

## **7. Non-admissible products**

In addition to the non admissible products as specified in the VQR Call, the GEV will not consider working papers (or discussion papers, or equivalent products) as admissible for evaluation, since this type of products is expected to be published in the future and will then be subjected to a subsequent VQR round.

## **8. Conflicts of interest**

GEV members will not evaluate or assign to external reviewers or other GEV members:

- products they have authored or co-authored;



- products which have been authored or co-authored by spouses and relatives up to the fourth degree of kinship;
- products submitted by universities of which they have been employees or official associates (even through research centers) since 1/1/2011;
- products submitted by research centers controlled by MIUR or other public and private entities that are voluntarily subjected to the VQR of which they have been employees or official associates (even through research centers) since 1/1/2011.

For the above products there exists a conflict of interest in the following cases:

- when the institution in question has a permanent internal division along a territorial or disciplinary dimension (e.g., a local section of a research center, institute, department), a conflict of interest exists only with respect to the products presented by the same internal unit;
- when the institution in question does not have a permanent internal division along a territorial or disciplinary dimension (e.g., a local section of a research center, institute, department), a conflict of interest exists with respect to the products presented by the institution;
- when the internal organization is based on several hierarchical levels (e.g., several institutes within a single department) a conflict of interest emerges at the lowest level (e.g., GEV members who are affiliated with different institutes belonging to the same department have a conflict of interest only with respect to the products presented by authors belonging to the same institute).

In case of conflicts of interest, the GEV Coordinator, or the sub-GEV Coordinator when appropriate, will assign the product to be evaluated to another GEV member for whom no conflict of interest is present.

In case of conflicts of interest involving the GEV Coordinator, the corresponding products will be assigned by the VQR Coordinator or by a person designated by the VQR Coordinator.