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# **New Tools for the Governance of the Academic Research in Italy: the Role of Research Evaluation**

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**Abstract.** Evaluation has been put on the agenda of most Governments as a central process to enhance the public research institutions' performance (Geuna, 1999, Geuna and Martin, 2003, Shapira and Kuhlman, 2003). New agencies or intermediate bodies have been settled up, both at the Government and at the institutions' level, aiming to assess the quality of research and its impact on the socio-economic environment.

In Italy, the pressure for a greater accountability of the public research institutions started at the beginning of nineties, but the system was deeply modified in 1999.

Moreover, the Government at the beginning of 2004 launched a formalised evaluation exercise (the VTR), aimed to assess the research performance of all the public institutions (Universities and public research agencies) across scientific fields, for a three-years period. The modification recently introduced in the Government criteria for the core funding allocation to the Universities would assure the impact of VTR results on funding decisions.

Different key interested groups, both from academics (Conference of Rectors) and from stakeholders (mainly Industrial Associations), contributed to the development of the described process, by interacting with the Government and with the intermediate bodies in charge for establishing the evaluation procedures.

The aim of the paper is to investigate how the new evaluation procedures, even at this early stage, have been implemented by the public research institutions, and how these procedures are changing the internal models of research direction and organisation. The paper was prepared for the Sociology of the Sciences Yearbook Conference on "Changing Knowledge Production through Evaluation" Bielefeld, 9-11 June 2005

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## Introduction

The emphasis given to the evaluation of research in most industrialised countries starting from the eighties, derives mainly from the Government concern about the optimisation of the resource allocation processes, due to the budget constraints, and from the need of accountability before the taxpayers (Oecd, 1997, Id. 1998).

The aim of the paper is to analyse the modification in the governance of the academic research in Italy, due to the introduction of the research evaluation processes from the nineties. The paper also investigates how the new evaluation procedures, even at this early stage, have been implemented by the public research institutions, and how these procedures are changing the internal models of research direction and organisation.

While in large part of Europe the attention paid to the research evaluation started from the eighties (Oecd, 1997), in Italy this priority emerged only ten years later. The reason of this delay grounds on the general difficulty for Italy to move from an administrative culture of the public sector management, focused on formal and bureaucratic controls of the State on the institutions, to a managerial culture, which is mainly focused on the achievement of the planned results and on performance measurement.

The advent of the New Public Management (NPM) paradigm for the organisation of the public administration gives more emphasis to the settlement of autonomy and accountability principles, for characterising the relationships between the State (as principal) and the academic institutions (as agents, Rip and van der Meulen, 1996). NPM is a narrative for the administrative reform, which assumes that the best way for modernising the public sector is to use concepts related to the business culture (Ferlie et alii, 1996; Barzelay M., 2000; Christensen T., Laegreid P, 2001). NPM aim is to strengthen the capability of the State to direct public organisations. The move is from a centralised way of steering, based on rational planning and controls, to a more decentralised steering, characterised by the supervision of the overall performance of the actors, which are free

for building up their own agenda, in principle. In any case, the policy decision-making still remains located in Government's handle. Thus, any relationships with non-governmental actors are hierarchical.

The paper deals with the changing steering and funding as general process which goes with the reform of the government structure and the organisational settings (Oecd, 2003). The focus of the analysis is the emergence of research evaluation in Italy, as a tool for governance of the academic research. The scope is the performance evaluation of the academic research institutions, with no reference to the assessment of both the individuals and the programs. In our discourse we are speaking about academic research as research carried out by both the universities and a group of public research agencies, under the Ministry of Education and Research (Miur) control (about twenty agencies). These institutes are entities traditionally performing university-related research: "referring to standardised Oecd terminology, university research coincides with R&D that is performed by the higher education sector; and university-related research coincides with R&D being performed by the government and private non-profit sector. ... Academic research clearly represent a science-based and science-induced activity, where a major emphasis is placed on basic research and on the combination of basic and applied research." (Campbell, 2003). Furthermore, we are using the terms evaluation and assessment as equivalent, for indicating the general process of evaluation of the academic institutions, even if the meaning is not exactly the same (Hills and Dale, 1995).

The paper is organised as follows. The first paragraph gives a brief overview of the differences in research evaluation models adopted in Europe as tool for governance. The second paragraph provides an analysis of the process of institutionalisation of the research evaluation in Italy, and its application in different environments of the academic research, namely universities and public research agencies. The third paragraph goes inside the impact of the evaluation procedures on the institutions' governance, the implementation of the evaluation within the institutions, and its

relevance for the development of new strategies and behaviours. The conclusions underline few critical points for the development of the research evaluation as tool for governance of the academic research.

The analysis is carried out through the Government official documents and through the documentation of the agencies or intermediate bodies in charge of evaluation. The results are thus controlled and discussed along some empirical results, which are highlighted in the recent literature.

### **1. Evaluation as a tool for the governance of the academic research**

The evolving pattern of knowledge production – developed in a “context of application” and in a “context of implication” - pushed the Governments to seek greater efficiency in their research investment, by using different means (Gibbons *et al.*, 1994; Nowotny *et al.*, 2001, Godin and Gingras, 2000). The introduction of the accountability principle, to be applied to the decision-making in R&D sector, was one of these means.

As a recent Oecd document outlined (Oecd, 2003), the governance of the science system was affected by many challenges, which can be identified, on the one hand, in the Government pressure for responding “to a more diverse set of stakeholders and exploiting emerging opportunities to harness scientific and technological advances to meet social and economic needs”. On the other hand, it is important for Government to ensure “the long-term sustainability of the research enterprise”. The last challenge implies the maintenance of a diversified range of conditions<sup>1</sup> aimed to avoid the risk to have a science system, which cannot cope with the need of flexibility, as emerged by the first challenge, as well as with the need to maintain (and possibly to reinforce) the long-term research capabilities. As to the academic

research, “the real question could be how to organize the university system and institutions successfully, by combining both the traditional academic and the economic functions that academia is required to fulfil” (de Boer *et alii*, 2002).

Different policy responses have been implemented throughout Europe, with diversified levels of commitment. They deal with the improvement of the stakeholder involvement in priority setting, the restructuring of the R&D funding agencies and mechanisms, as well as with reform of the structures for the research performance (Oecd, 2003).

As to the funding system, the shift toward a contractual-oriented rationale impacted the structure of academic income, with a decreasing role of the general Government grants transferred as core funding to the institutions, and the increase of different external sources: Government project funding allocated on a competitive basis, contracts from industries and other external clients, EU funding. This transformation generated a “friction between curiosity-driven research aimed at research-directed advancement of knowledge frontier and targeted research driven by the need of society” (Geuna, 1999) and a new flexibility of the institutes’ research agenda (Potì and Reale, 2000).

#### *Aim of evaluation*

Within this context, evaluation has a special position, as instrument specifically devoted to assure the control on the scientific performance of the research organisations, both in terms of excellence and relevance. Evaluation is a process for bettering the efficiency and effectiveness of the Government policies; it goes with the adoption of a steering at a distance model in the relationships between the State and the research performers, which guarantees a large space of autonomy to the academic agents. The justification of research evaluation thus emerged for the State from the need to control and steer the academic research behaviour, in order to realise certain objectives, such as accountability toward the stakeholders,

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<sup>1</sup> The Oecd document identified six major conditions: maintaining breadth and diversity in the research portfolio, ensuring resilience to external shocks, preserving the integrity and cohesion of the science system, securing sufficient funding for public research infrastructure, adjusting to changing government missions, ensuring the supply of human resources (Oecd, 2003).

resources allocation and prioritisation, knowledge acquisition for implementing research policies on funding investment (Georghiou, 2001). Evaluation was conceived by Governments as a mechanism for allocating and managing resources for research, and it is focused on policy related questions, in some cases as United Kingdom (Geuna, 1999; Geuna and Martin, 2003), but it is also seen as a process for stimulating learning processes at the institutional level, thus influencing the internal and external decision-making (Campbell, 2003).

Geuna and Martin (2003) discussed advantages and disadvantages of approaches to university research funding based on the results of a performance evaluation. They evidenced that some positive effects could derive from the incentive to improve both individual and institutional performance through competition for funding, and from the attempt to try to accomplish better than before with the government policies thus providing public accountability for the government investment in research. But negative effects could derive from discouraging innovative and risky research, with the reinforcement of processes toward the homogeneity of the research activity, publication inflation, over-concentration of resources on the research elites.

#### *Initiative and object*

The development of evaluation procedures and methods are influenced by the country government model: from a centralised one, which adopts periodical top down evaluation processes, to a decentralised one, which is mainly based on assessment exercises derived from a bottom up initiative. In most cases, there is a mixed initiative, which is undertaken by both the State and the research performers, for reinforcing the outcome of the process and for facilitating the implementation of the evaluation itself (Oecd, 2003).

The object of evaluation can be focused on some specific functions, or can be comprehensive, thus addressing the whole activity of an institution. On the basis of this choice, it can be decided what is the level of evaluation, individuals, institutions, systems,

projects and programs, policy instruments, or a combination of these levels. Evaluation could be carried out *ex ante* or *ex post* the event to be assessed. Also *in itinere* evaluations are developed especially for multi-year programs.

#### *Methods*

According to these premises, evaluation can be organised in many different way. As to the chosen method, we can have (simultaneously or alternatively) peer review (classical or modified and informed, Hannson, 2000), bibliometric analysis, management and impact evaluation, user evaluation and historical evaluation. Criticisms about method are focused on weakness and strengths of qualitative ones (mainly peer review) and quantitative ones (mainly bibliometrics).

Peer review strength ground on complexity (the large set of information that can be taken into account, bigger than those provided by indicators). Experts can conduct analysis more complexes than these allowed by indicators, while its weakness ground on subjectivity (the composition of the panel can bias the peer judgement), and, in some specific field, it is difficult to find real independent peers (Kostoff, 1997; Van den Beemt, 1997).

The need for a different consideration, within the evaluation exercises, of the interaction between research and the society, comes from the critique to the Mertonian idea of a system of science, in which the social, personal, organisational and political factors do not play any role (Merton, 1968, Merton and Zuckerman, 1971, Whitley, 2000, Latour, 1987, Fuller, 2000), and the overcoming changes in the mode of knowledge production (Gibbons and alii, 1994, Etzkowitz and Leydesdorff, 2000). All the quoted elements reinforced the experimentation of other methods (programme evaluation, case studies, benchmarking), and stressed the importance of quantitative analysis (publication and citation analysis) and judgement based on measures as a supplement to peer review. The strength of this method grounds on its objectivity and its minor costs, while its weakness ground on the superficiality of the judgement (van Raan, 1988; Rinia *et alii*,

2001) and on the difficulty of indicators to capture the real value of the research activities (Barré, 2001b). The criticism to the quantitative methods lies in the fact that “bibliometric indicators like impact factors reflect impact, not quality” so “they can only be used as supplementary tools in the evaluation of research, and only then if their inadequacies are taken into account” (Day, 2004).

### *Criteria*

Also criteria are selected by considering the general context in which evaluation is developed. If “authoritative goal statements” – based on quality and quantity – are more common for the scientific evaluation, mainly addressed to understand the value of the research effort in scientific terms, interested groups and stakeholders can be another important source of criteria for the evaluation of the impact and the utility of the research (Kalpazidou Schmidt, 2002).

Foss Hansen characterised the different methods used for evaluation on the basis of their focus, purpose as well as on the basis of the evaluator in charge for the assessment exercise. (Foss Hansen, 1995). The author underlines that the evaluation process can be organised with a focus on the structure – when the analysis is mainly direct to understand the organisational capacity – , on the process – that is on the range and quality of the activities carried out – , or on the outcome – which is an assessment of products produced in the previous years through different methods.

### *Types*

The evaluation process is another key point for understanding the characteristics of the adopted mean. As the literature underline, “evaluation is the basic decision-making mechanism in the research system” (Barré, 2001a). We can find basically two types of evaluation: the *scientific evaluation*, which could be shaped as “integral part of the process of the production of scientific knowledge”, and/or could assume the form of “external evaluation” such as auditing for assessing “the quality of the management and

organisation of research”. On the other side, we can find the *strategic evaluation*, which is aimed to know the impact of research on the socio-economic environment, with the purpose to implement the policy design, and to support the decision-making of funding (Barré, 2001a).

Diverse types of research evaluation can coexist within a country. In the European context, the academic research was mainly submitted to a quality assessment deriving from a top down initiative of the State, but also self-assessment exercises were carried out in many cases (Campbell, 2003; von Tunzelman, Kraemer Mbula, 2003).

### *Organisation*

The organisational models adopted by the European countries have some commonalities, which were identified in four elements: a national coordinating body in charge of evaluation, the development of both self-assessment exercises carried out by the institutions and the external evaluation by peers, the publication and diffusion of final reports (van Vught and Westerheijden, 1993).

Along with this common scheme, many differences exist between countries. Such variations have been examined from different point of view (methods applied, context of evaluation, distribution of power, external groups involved, impact of evaluation on the organisation and management, as well as on the governance level). The main results are:

- the quality assessment effects vary on the basis of the way of distributing the steering power. The presence of a relationship between evaluation, trust and the market impedes that the assessment is perceived as a top-down control and a way for conditioning the research agenda (Brennan, 1998). For achieving this aim, the presence of institutions operating at the intermediate level could be very important;
- evaluation is often associated to the introduction (or the reinforcement) of the institutions’ autonomy, which give them larger spaces of manoeuvre for pursuing their own objectives and for prioritisation (Clark, 1983). At the same time, according to the

accountability principle, institutions should enhance their capability to answer to the external demand coming from the society. The State uses quality assessment for maintaining a strong control on the institutions, even though it allows decentralisation processes;

- other differences are linked to the subject in charge of evaluation (the State, the institution, a specialised agency), and to the power attributed to it. As to system evaluation level, the problem lies on the power distribution between the State, the academic profession and the market.<sup>2</sup> The different emphasis attributed to the three subjects is a feature that impacts on the final use of the assessment results, and the selection of methods. As to the institutions' evaluation level, the controversy about power is between staff members and institutions. "On the whole, an assessment method which focuses on the institutional level is likely to reinforce the power of institutional management. ... Conversely, an assessment method which focuses on the subject level will tend to reinforce the importance of subject values and academic work, thereby enhancing the power of the subject group" (Brennan, 1998).

#### *Impact on the institutions organisation*

The evaluation processes impact on the relationships between the academic institutions and the State, but also the institutions' organisation and management. Evaluation tends to modify the internal distribution of power and the way in which it is used. Evaluation produces new modalities for participating to the

<sup>2</sup> The literature underlines that the co-ordination of the academic system could be described on the basis of the relevance attributed to the State, the market and the academics. In the first case, we can face centralised systems, or, alternatively, the State can play a role of supervisor, by fixing the general principles for the functioning of the system, letting the institutions free of self regulating themselves (Van Vught, 1993). In the second case, when the market is the dominant force for co-ordinating the system, the academic institutions tend to assume quasi-market behaviours and the internal structure tend towards getting high levels of flexibility and adaptability to the external clients needs. In the third case, the coordination is played by the members of the academic staff, or by their disciplinary networks (Clark, 1983).

institutions' government, it gives raise to learning processes on the changes affecting the ways of knowledge production, and it represents a mean for realising transparency of resources allocation processes and public accountability of institutions for their research activities.

At the individual level, the impact of evaluation can affect either the awareness of the need to justify the use of public resources, either the scientific work as to the selection of research themes, publication strategies, diffusion of results.

The impact of research evaluation exercises on the academic institutions, above all on the higher education sector, usually were analysed by making reference to the quality assessment exercises. These exercises show many differences between countries. Brennan and Shah results, based on a number of case studies on higher education carried out in fourteen Oecd countries, suggest that "factors such as size, structure, prestige, resources, mission, history and leadership are the sources of major differences between institutions. These features of institutional context combine with those of the national context to help shape the impact of quality assessment within the individual institution" (Brennan and Shah, 2000). Evaluation impacts institutions through rewards (of status, of income, of influence), through changing the policies and structures, through changing the cultures. Moreover, implications for values and for power relations emerged. As to the latter one, the authors noted the presence of evaluation influencing both the distribution and the balance of power within higher institutions, as well as impact on how decisions are made, and on the autonomy of institutions vs the autonomy of the basic units and the individuals. Moreover, a problem of legitimacy of quality assessment exercises emerged with respect to the different players: academics, students, other external stakeholders.

## **2. The emergence of research evaluation in Italy**

Italy remained for a long time away from the introduction of evaluation practices within the public sector of research, above all within the

academic research institutions. The Oecd Review of the Science and Technology Policy for Italy underlined, at the beginning of nineties, that the so called “culture of evaluation” was still law. This point was considered as one of the main weakness of the national research system, along with the absence of a real autonomy of the universities and public research institutes (Oecd, 1992).

This delay is strictly connected with the characteristics of the national political context and administrative culture. As the literature evidenced, in Italy “instead of programs connected with specific interventions, to date, we have had a framework laws, major reform laws and by-laws, which establish principles but hardly lead action. Most of the time, instead of seeking to achieve results, we have been content to observe norms, if not simply reiterate procedures. This is aggravated by the fact that public interventions are heavily burdened by our administrative law.” (Stame, 1998). Moreover the author suggests another factor which inhibit the springing up of evaluation in Italy: “the association between evaluation and sanction. The origin of this confusion is no doubt to be found in our legal culture: the idea that a public intervention aimed at solving a problem can be judged on the basis of the results it has achieved is totally alien to that culture, because it holds the deep-rooted conviction that an action can only be judged by its compliance or non-compliance with norms” (Stame, 1998).<sup>3</sup>

The emergence of research evaluation in Italy should be linked to the more general reforming process of the Public Administration, starting from the beginning of the nineties.

A first step was the law 168/1989, which introduced provisions aimed to produce some important structural changes in the higher education and research sector. Firstly, the institution of the Ministry for the University and the Research (Murst, then transformed in Miur), as main State authority for governing the national research system; secondly, the acknowledgement of the autonomy of the

universities and the public research agencies under the Miur control.

A second step forward the autonomy was represented by the general reform of the Public Administration in Italy, the so-called “Bassanini law” (l. 59/1997). This law realised the decentralisation of the administrative action, as consequence of the subsidiary principle. It also introduced the NPM criteria for the management of the public institutions, university included. The provision implies a revision of the traditional bureaucratic action, which invested also the research system by enlarging the sphere of actions transferred by the State to both the universities and the university-related agencies. The Bassanini law also introduced definitively the concept of accountability, as mean for assuring the responsibility and transparency of the administrative action (Oecd, 2001). The guiding principles of Government strategy were efficiency, accountability, decentralisation of functions, increasing autonomy of institutions and responsibility of the managers (Oecd, 1995; Id. 1997b). As to the research system, the Government aims were to eliminate some disadvantages such as the absence of long-term planning, the weak co-ordination of functions and players, the want of separation of the direction-evaluation phase from the management of the research efforts, the lack of satisfactory evaluation processes linked to funding activities (Reale, 1998).

In the higher education system, accountability derives mainly from the State awareness about the linkages between the universities and the economic growth, about their relevance as public services providers, and their dependence from public money. Accountability is also linked to the relevance of the university-related research institutions for complying with national research priorities, thus reinforcing the capability of the whole public research system in transferring scientific results to the economy and society.

The law 168/89 did not produce effects immediately, for its internal ambiguity about the scope of the power transferred to the universities, and for the resistance opposed by the administrative bureaucracy and the professors to its realisation (Cassese, 2000).

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<sup>3</sup> Stame mentioned also that evaluation emerged as a process linked to the allocation of public expenditures during the eighties. It was devoted to assess the returns of investment, the impact of environmental policies and the effectiveness of social care services.

For the higher education system, its effectiveness occurred when the financial laws for the years 1994 (l. 537/93) and 1996 (l. 549/95, Capano, 1999) defined the basic discipline of the university autonomy. These provisions established the financial responsibility of the universities for the allocation of the resources transferred by the State (passage from the line-item budgeting to the lump-sum budgeting). Furthermore, the effectiveness of the autonomy-accountability principle in the relationships between the State and the university was ensured by the help of a new organism, the Observatory of the University, in charge for the evaluation of both teaching and research functions (Biggieri and Scarpitti, 1998, Boffo and Moscati, 1998).

A few years later, the *Osservatorio* for the evaluation of university was transformed in a National Committee for the Evaluation of University (CNVSU, law 370/1999), as technical organism belonging to the Miur, in charge for the evaluation of the higher education system. In each university a *Nucleo di Valutazione* (NUV) was constituted, for the internal performance assessment as well for supply data, information and analysis to the CNVSU (decree 224/99). Many administrative responsibilities were transferred by the central administration to the universities for the internal management (Reale, 2003, Poti and Reale, 2005).

As to the public research agencies, the law n. 204/98 and the Decree n. 381/99 reformed the Italian research central organisation and created the National Committee for the Evaluation of research CIVR, for the assessment of the non-university public research organisations.<sup>4</sup> The law established also the settlement of one Internal Evaluation Committee-CIV within each public research agencies under the CIVR control.

CIVs are panels of experts, nominated by the agencies themselves on the basis of criteria

established by the CIVR. The CIVs aim is to carry out systemic evaluation of the whole research organisation performance (Reale, 2003). CIVR developed a three-year work (1999-2001), by evaluating the most important Italian non-university research agencies (sixteen major agencies), and monitoring the state of the art of research evaluation in Italy (CIVR 2001; Id. 2005).

In the first years of the twenties, formal linkages between the performance assessment and the resource allocation have been settled up for the higher education system (Decree 115/2001). The funding model was transformed; new regulations for connecting the university performance in education with its level of funding (Decree 165/2001) were established, and new competitive instruments, based on ex ante evaluation procedures for research funding, were introduced.<sup>5</sup> A few years later, a new formula for the distribution of the general university funding was approved, with a high percentage linked to the research results assessment (CNVSU, 2004).

As to the public research agencies, the same provision is not yet formally assured, although the recent National Research Plan put evaluation as one of the main instrument for the internal and external resource allocation (Miur, 2005).

All the universities and the public research agencies are now undergoing the first National Evaluation Exercise for Research (VTR), launched by the Government in 2004, and managed by the CIVR. The results of this exercise will influence the Government funding allocation and will provide evidences for the further structure of the research evaluation.

In sum, the institutionalisation of the research evaluation within universities and university-related institutes derived from different processes, and different agencies have the responsibility and supervision of the process itself. The starting point for both the processes was the same: the acknowledgement of the scientific, financial and organisational autonomy of the institutions from the State, and the attempt to introduce the steering at the distance in the relationships between the State and the

<sup>4</sup> According to the law 204/98, the Committee institutional tasks are aimed towards:

- the diffusion of the evaluation culture within the country,
- the setting up of general criteria and indicators for the ex post assessment of the public funded research activities (those carried out by both public and private structures),
- the definition of the conditions to be applied for the composition of the Internal Evaluation Committees - CIVs of the public research agencies.

<sup>5</sup> The most important instrument was the competitive fund called PRIN, which represents the general mean for funding the university research (Poti and Reale, 2005).

institutions and the NPM principles for the internal management. Other commonalities of the evaluation system are:

- the processes develop a comprehensive evaluation of the institutions;
- the evaluation narrative is aimed toward the accountability of the academic research before the taxpayers. The results coming from the evaluation should address the resource allocation, and enhance the competition between the institutions at national and international level;
- the chosen methods combined the peer reviewing with the use of performance indicators, with a focus on the outcome and the organisational capability of the structure;
- the exercises developed are mainly quality assessment, while the strategic evaluation was not yet largely applied.

Notwithstanding these common features, the evaluation institutionalisation process follows different patterns for the universities and the universities related institutions. Diversities are linked to the subjects in charge of the evaluation, their power and position, and to the interested group which intervened for influencing the organisation and the application of the research evaluation system.

### *Universities*

The evaluation of the universities is considered from the beginning as a tool for the governance of the higher education system, thus was linked to the decision making on resources allocation. The main object of the assessment process was the education function and not the research activity, and the central aim of the exercise was to define standards which would assure the efficiency and effectiveness of the system.

The process was conceived as based on a networking organisation. The main organism in charge of evaluation is the CNVSU, which operates as Government technical body, by providing studies, analysis, annual reports and monitoring activities. CNVSU members are appointed by the Miur.

At the university level, the NUVs operate as internal bodies of the universities at the

institutional level, while at the faculty level special Commissions were established for the funding allocation. The NUVs component and status are defined by law; the members are appointed by the Rectors, who determine also how many external members could be included. The NUVs have the control on both the management of the resources and the productivity levels of educational and research activities. Their outcome consist in data, information, reports, advisor activity and proposals, which are transmitted to the CNVSU, and could also be used for the internal decision making on resources allocation, but with a different effectiveness.

The difference consist in the fact that all the requests of the CNVSU are linked to compulsory tasks, which are affecting the subsequent Miur provisions, while the same effect is not certainly linked to the internal decision making. The university management bodies could give diverse levels of effectiveness to the NUVs activity, by considering it an unavoidable step for determining the final decision, or by considering it as a way for merely certifying the formal correctness of the acts.

The CNVSU task is to elaborate the Plan for the development of the higher education system by using data, information and reports transmitted by the NUVs, as well as to determine criteria for the allocation of the General University Fund (FFO), or other criteria for the research assessment.

Other organisms competed for controlling the organisation and the application of the research evaluation exercises. The CRUI, the Italian Standing Conference of Rectors, had a leading position in the institutionalisation of the evaluation of research from the beginning of the process, by stimulating "reflection and dialogue on issues related to the establishment with the universities of periodical evaluation practices. CRUI provided assistance to the universities in setting up an internal evaluation system, as well as proposing and testing possible procedure and operations. ... Thus, CRUI played a leading role in defining evaluation procedures and methods and in diffusing the culture of evaluation among universities" (Boffo and Moscati, 1998). The Committee action was mainly devoted to maintain the sphere of autonomy attributed to

the universities, by influencing with its expertise decision and methods elaborated for the university evaluation.

By the end of nineties, the CRUI proposed a complex procedure for the evaluation of research carried out within universities, aimed to assess the disciplinary macro-sectors (CRUI, 1999). The proposed method use both quantitative and qualitative approaches for obtaining more in-depth of the research effort, and foreseen both a self-assessment phase and an external assessment phase. The self-evaluation process focuses the analysis on the research objectives and on the activities aimed to gain the established goals. The large amount of indicators, identified by the CRUI, refer to the input resources, the process, the output of products and the context in which the research activities have been developed. The external evaluation focuses on criticism of the self-evaluation process, by controlling both strengths and weakness within the macro-sector. The process was intended as an experimental phase to be implemented and improved through the simplification of indicators and the definition of a method for comparing the different disciplinary macro-sectors.

After the CRUI proposal, a certain number of universities developed evaluation practices, but the chosen methods were not exactly the same as the CRUI proposal. Modification were linked to the need for adapting the method to the context of application, that is influenced by different factors (university size, specialisation, age, territorial embedding, local development, etc.). Anyway, evaluation produced a substantial improvement of the universities acceptance of the ex-post performance assessment. The direct effect on the internal resources allocation initially was limited to a short number of universities (Carotenuto *et alii*, 2001), but now the results of the outcome evaluation are taken into account by a large number of universities. On the other hand, there were no cases of external assessment. However, it is important to underline that the acceptance of the CRUI method by the universities, as well as the experimentation of self-determined research evaluation exercises, occurred on a voluntary basis, and universities were not obliged to link evaluation of research and resources allocation.

The leading position of the CRUI has now more and more to face the CNVSU action, that for the research evaluation proposed a method based on the definition of the research potential for each university (quantitative estimation of the “active research personnel”) to be weighted with the PRIN success index (number of PRIN applicants funded/number of applicants, CNVSU, 2004). The CRUI expertise on education and research evaluation, which was exploited through many other initiatives<sup>6</sup>, is questioned by the action of the CNVSU, and by the want of the Miur to assume the position of State evaluator, with a tendency toward the centralisation and the reinforcement of the control on the actors behaviours.

#### *University-related institutes*

The evaluation of the university-related institutes followed a different pattern of development, and it was characterised from the beginning as a top-down process, which follows the CIVR activity.

At the institutes' level operate the CIVs, which are panels of experts, nominated by the agencies themselves on the basis of criteria established by the CIVR. The CIVs aim is to develop systemic evaluation of the whole research organisation performance. The panels are composed from 5 to 7 members; they include both experts in the specific discipline or sector of activity (peers in the strict sense), as well as experts in the economic assessment of the internal management. In some cases also potential users of the research activities have been nominated. The committees should include a certain number of components coming from abroad; the impartiality of the judgement is guaranteed by the absence of institutional relations of the CIVs members with the agency. The CIVs work should fit with the requests coming from the CIVR, complying with the set of evaluation criteria that have been requested. Furthermore, CIVs can identify and explore other relevant criteria for the agencies' assessment.

<sup>6</sup> One example for the research evaluation is the initiative for analysing the universities' scientific production, by using bibliometric indicators (Breno *et alii*, 2002).

From a methodological perspective, CIVR analysis tries to combine both external reviewing and quantitative analysis through a set of selected indicators. CIVR asks the agencies for carrying out two different exercises.

Firstly, a self-evaluation exercise, made by the agencies themselves, that are committed for a critical review of their performance according with a set of proposed criteria. Secondly, a CIV' evaluation exercise, based on both the self-evaluation results, and other knowledge activities autonomously decided by the Committee (local visits, auditing, special meeting, other expert views, indicators, etc.). Thirdly, the CIVR final judgement on the agencies performance was based on the identification of points of strengths and weakness in pursuing their institutional mission, mainly through the qualitative judgements provided by the CIVs (Reale, 2003). The exercises developed for complying with the CIVR requests were characterised by substantial differences because of *a*) the diversities existing between academic institutes for missions and disciplinary areas, *b*) the relevance attributed to the evaluation by their internal decision makers, and *c*) the different level of confidence and expertise of the agencies with the evaluation of research (CIVR, 2000; Id., 2004).

The CIVs remained completely external structures, which did not impact the internal organisation of the institutions; moreover their only task is to develop the performance assessment for the CIVR, without any commitment with other tasks for the agencies' self-evaluation.

Although the evaluation narrative was the same as the universities, no formal linkages were settled up for using the results as means for the decision making or the funding allocation. Anyway, we faced a movement for building up the evaluation exercise within the agencies, due to the fact that they are obliged to undergo the CIVR examination. The movement involved both agencies where an internal evaluation process was present (such as INFN and INFN), and agencies without any previous experience in systemic performance assessment. The movement implies the growth of the agencies' requests for CIVR auditing, the organisation of national conferences, seminars and forum for

discussing issues related to the evaluation of research, the constitution of task forces within the agencies for supporting the CIVs activity (Reale, 2003).

Last but not least, another great difference with the universities lies in the absence of groups, or organisation, which competed for controlling the application of the assessment exercises, or which operated as buffer institutions between the Government and the agencies.

#### *The National Evaluation Exercise for Research (VTR)*

In 2003, a new Miur Decree n. 2206/2003 launched the first Three-Year Evaluation Exercise (VTR) that is now ongoing.<sup>7</sup> CIVR is in charge for the VTR, that is aimed to *a*) testing rules and procedures for evaluating the national research system, *b*) improving the institutional link between evaluation and resource allocation, *c*) favouring the spread of research results. The evaluation system is direct to assess R&D performed by the public research structure (both universities and academic research agencies) and the national research programmes. It is based on three bodies: the CIVR itself, the Panels (20) for the different scientific areas, and the Evaluation Committees which work inside the evaluated structures (NUV for the Universities and CIVs for the agencies).

NUVs and CIVs transmit to the Panels the research products selected autonomously by the research structures under evaluation (products should not exceed the 50% of the FTE researchers working in the structure). NUVs and CIVs also transmit a set of data and indicators to the CIVR. The Panels, composed by high level peers nominated by the CIVR, assess the research products, even with the support of external experts (2 experts for evaluating each product). Each Panel transmit a final Report to the CIVR, with a ranking of the institutions on the basis of the quality assessment results. The CIVR integrate the outcome of the Panels' analysis with its own analysis of the data and information collected, thus forming the Final Report with the whole assessment of the

<sup>7</sup> The exercise shall end in the second half of 2006.

national research system by structure and by scientific area (CIVR, 2003).

The VTR merges the different experiences of universities and public agencies evaluation of research, also including some aspects of other evaluation systems existing abroad, namely the Research Assessment Exercise (RAE).

The process foresees both quantitative methods for evaluating the institutions' performance, and the peer reviewing for judging the quality, relevance and originality of the selected products. The Panels' composition should assure the presence of different kind of peers, thus representing the interest of users and the need for an international perspective for the quality assessment: members, in fact, come not only from the national academia, but also from the socio-economic world as well as from international academic institutions.

The proposed exercise seems to avoid some disadvantages of the performance-based evaluation systems, namely "the high cost and the tendency towards "publish or perish", and the "publication inflation", with researchers seeking to split the results of their work into the least publishable units" (Geuna and Martin, 2001).

The expectation, in fact, is toward a reduction of the number of products, trying to better the scientific quality, simply by publishing on the more relevant journals or editors.

Anyway, some drawbacks could emerge. First of all, the push towards publishing on the better recognised journals could create a sort of homogenisation of the research effort within the public research structures, reducing the incentives for a differentiation of the institutions' profiles. Furthermore, the proposed system could restrict the spaces for creativity and new ideas, as well as for high-risk projects, which have a greater possibility of failure than the traditional ones. Finally, since the system is aimed to provide the evaluation of excellence, it could create some misunderstanding on the effective value of the overall university research production (Reale, 2003).

A final remark is needed for underlying the weak linkage with the resource allocation processes both at national and internal level. Although the Decree 2206/03 declared that the

VTR results shall impact the decision making, no precise means have been established for linking these results with the government acts.

The described processes affected the internal governance of the research organisations and their behaviours in different manners. The following paragraph gives some insights of these impacts in the research environments.

### **3. The impact of the evaluation procedures on the institutions' organisation and behaviours**

The institutionalisation of the academic research evaluation in Italy impacts the governance of the institutions and their behaviours in different ways.

As to the university system, the Annual Reports of the CNVSU give an overall picture of the problems faced by the NUVs in the first years of activity, linked to the lack of resources, to the difficult for accessing data and information, for the positioning within the university governance system. The NUVs composition changed along the years and now the presence of external members is widespread even with different weight. The NUVs role and their action for the evaluation of research are not yet homogeneous in all the universities (CNVSU, 2004).

A study carried out on the changing dynamics within the Italian university (Fassari, 2004) suggests the presence of four different ways in which the NUVs reacted to the request coming from the CNVSU and from the CRUI. The first is a tendency toward anticipating the external requests, with a proactive role of the university for seeking the best practices for research evaluation, which can be adopted at the national level. The second is a tendency toward the negotiation of the evaluation practices, which derived from an agreement about the introduction of some modifications on the proposed model. The third reaction can be labelled as adaptive, because the NUVs behave by imitating practices experienced by other universities, without an effort to modify them in any way. The first and the second behaviours are mainly developed by medium-size universities located in the north of Italy, while

the largest ones show a more propensity toward an adaptive behaviour. The last typology of NUVs shows an elusive reaction, which tend toward a non-action style (the Committee do not meet periodically, do not have any resource, data and information transmitted to the CNVSU do not comply with the assessment requested).

A second problematic item deals with the NUVs positioning within the university government bodies, and with respect of the Rector. This positioning could be characterised by a substantive separation of the NUV from the other bodies, or by an explicit or implicit conflict. In both case, the analysis of the existing practices shows that the NUVs capability to perform activities which impact effectively on the institutions decision making is almost nonexistent (Fassari, 2004). The internal structure tends toward the NUVs exclusion, by giving it only a role of certification more than evaluation (Fassari, 2004). A key factor for determining the NUVs position is the support supplied by the Rectors, which leadership is becoming the real engine for the universities organisational changes. Thus the movement towards autonomy and accountability is not driven by institutional factors but it is mainly linked to individual capabilities.

As to the resources allocation, the NUVs Reports for the more recent years (2002 and 2003) show that a widespread practice which take into consideration indicators of research productivity and research quality for the funding repartition among fields, goes with a weakness of the institutional governance. The power continues to be in the handle of the Faculties as representative of the academic disciplinary corporations (Clark, 1983, Capano, 1999) and the existing structure of the decision-making is not able to reinforce the autonomy of institutions vs the autonomy of the basic units and the individuals.

The evaluation impact on the university related institutes was different. First of all, the CIVs position is not integrated within the institutes' organisation. They are and stay as external bodies, created for a special aim, which is limited in scope and time.

The degree of the institutes' commitment on the CIVR assessment was mainly linked to the relevance attributed to the research evaluation

by their decision makers, and to the previous experience of the institutes on evaluation practices (CIVR 2001; Id., 2004).

Some institutes<sup>8</sup> took the occasion of the CIVR initiative for re-structuring the internal evaluation system, with the aim to acquire a greater external visibility of the quality and the relevance of research results. Others<sup>9</sup> used the CIVR initiative for developing and testing new quali-quantitative evaluation methods, which were proposed by the CIVs. In both cases learning processes coming from the assessment exercises invested the institutes, not only by providing new insights on the method for the systemic evaluation, but also by supplying new knowledge and awareness about the research activity value (strategic evaluation). In other cases the institutes' answer was adaptive: monitoring activities were developed<sup>10</sup>, or minor modification of the existing evaluation practices are applied. Finally, there are cases in which the evaluation activity has been developed differently from the CIVR directives, by avoiding the self-evaluation phase, or by avoiding the CIV external evaluation.

Anyway, the CIVR evaluation was perceived as a top-down exercise, in which the State assumes the role of evaluator, with a centralisation of the process results, and a strong finalisation toward the performance control. All the CIVR documents reveal that the outcome of the assessment exercises generally did not implement the strategic choices at the institutes level. In some cases there is an attempt to introduce some minor revisions within the internal organisation, while a greater attention is paid for applying the changes suggested by the CIVR to the evaluation practice. This evidence reinforces the general impression that the agencies' behaviours toward the CIVR evaluation were prudent.

VTR represents an element of discontinuity in the evolution of the research evaluation in Italy, for different reasons:

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<sup>8</sup> It is the case of the Institute for the Nuclear Physic – INFN and the Institute for the Physic of Matter – INFN.

<sup>9</sup> It is the case of the National Institute for the Electronics - IEN, the National Institute for the Oceanography and Volcanology – OGS, the Stazione Zoologica Sperimentale, the Istituto Papirologico.

<sup>10</sup> It is the case of National Research Council - CNR and National Institute of Geology and Volcanology – INGV.

- VTR exercise is completely focused on the academic research performance and it proposes an approach, which integrate informed peer reviewing for the evaluation of the outcome, with performance indicators for the institutions' assessment;
- the process obliged the institutions to select the products to be submitted to the Panels evaluation. Each institutions is free to choice the products on the basis of their own criteria, with the aim to combine the highest quality level with a good representation of all the disciplinary sectors existing within the structure.

The VTR processes impact the institutional level, by forcing the structures to a strong commitment on research evaluation and by questioning about the role of the internal evaluation units. NUVs and CIVs were in charge for transmitting both products and data to the Panels and the CIVR, as well as for validating all the information supplied. Moreover, monitoring activities within the academic institutions have been developed for collecting input and output indicators requested by the CIVR.

The VTR will provide a positioning (ranking list) of the academic institutions within the disciplinary sectors, thus pointing out excellence and weakness. These results will be taken into account for the policy decision making at both national and institutional level, while elusive institutional behaviours should be more difficult due to the large diffusion assured by law to the CIVR Final Report. Even impact on scientific fields are expected, since the institutionalisation of such a process could affect the way of knowledge production as to the type of outcome, and research practices, by introducing, as relevant for the final judgment, factors other than scientific into account (social and economic needs, institutional accountability, internationalisation, etc.).

#### 4. Conclusions

From the nineties we faced in Europe a large movement toward fixing a strong correlation between autonomy and accountability for the governance of the academic research.

Evaluation is considered a mean for controlling the research system; the structures in charge of evaluation "become powerful players in re-shaping the universities, while maintaining a rather remote position of objective quality measurement" (Felt, 2001).

The international competition and the steering of the State push the academic institutions toward a new awareness about the importance of seeking for a greater accountability towards the society. It also reinforces the need of a strong governance at the institutional level. This reinforcement could not be identified in the action of only one internal government body (as the Rector for the universities), but it should ground on a combination of different groups action, able to represent the diverse interests in play (Clark, 1995).

The evolution of the research evaluation as a tool for the governance of the academic research in Italy show some features, that can be summarised in the following points:

- Italy experienced a comprehensive and context sensitive evaluation, which compared performance of academic research in a given period (changes, dimensions improved, weakness). Only occasionally it deals with explanation about changes occurred in terms of responsibility of the assessed structures or in terms of how policies modify or address the academic research performance and behaviour (Gibbons, 1989);
- process initiative is attributed to the Government structures in charge of evaluation. Only in limited case this external initiative goes with an internal one;
- external actors are involved in the evaluation processes in principle, and their presence is going to be reinforced, almost in the VTR exercise;
- chosen methods conjugate quantitative and qualitative approaches, asking for an efficient information system for monitoring the selected indicators over time.

Other characteristics are the fragmentation of the evaluation system among institutions, with a network-based organisation in the case of university. Methods applied are different and the comparability of the results is limited. The

linkages between research evaluation and Government resource allocation are still weak.

The position of competing groups or organisations acting as buffer institutions was very important for the introduction of the culture of evaluation, almost within the university system. This position is now questioned by the Government tendency to maintain all the assessment exercises in the hands of the CNVSU and CIVR. But the Committees are assuming different roles. While CNVSU operates as a Government technical body for the university assessment (by providing studies, analysis, reports, monitoring activities, etc.), CIVR gradually moved from a technical position toward a more interacting position acting as an intermediary organism between the State and the academic institutions. This behaviour became evident when the Committee elaborated the Guidelines for research evaluation (CIVR, 2003) and in the starting phase of the VTR. In both circumstances, CIVR carried out large consultative processes with many organisms representative of both the academic and the stakeholder interests<sup>11</sup>, trying to harmonise their different needs and requests with the Government aims. The result was successful: the institutions acceptance of the VTR scheme was a key factor for allowing the development of the national research evaluation process (Poti and Reale, 2005).

The evaluation of the universities and the university-related institutes shows differences in methods and organisation, basically because of the institutions' different degree of autonomy, but its impact has some commonalities such as:

- a good level of cultural changes linked to a new awareness on the need to improve accountability, quality, national and international competition for scarce resources. In many cases also learning processes about evaluation aims and methods are developed;
- a limited organisational changes through the

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<sup>11</sup> Consultations were carried out with CUN, CRUI, with a large number of universities, with representatives of the main public research agencies, associations of industries, and other stakeholders. After the Miur decree launching the VTR, CIVR enters in touch with each university for other consultations on aims, structure and practical aspects of the evaluation exercise. The results of these consultations impact the subsequent Committee directives for the VTR development.

introduction of evaluation units in charge for monitoring and assess the research output, which were not involved in decision-making processes in most cases.

The research assessment exercises in Italy have not yet played a key role neither for reinforcing the Government power to control and steer the academic research performance, neither for modifying deeply the institutions' governance.

Evaluation as mean for the governance of the academic research was influenced by different factors. First, as to the national context, the relationships of the State with the academic institutions and its tendency toward assuming a position of State Evaluator, with the reduction of the intermediaries role (above all the CRUI) in favour of reinforcing the national Committees in charge of assessment. Second, as to the institutional context, the elements that seem to have a major effect are the existing practice and expertise on research evaluation, for the university-related institutes, and the internal leadership (mainly the Rector) for the universities.

VTR is the ongoing new phase in the evolution of the academic research assessment in Italy. The attempt to merge in one process the evaluation of the overall national research is perhaps the most innovative aspect within the European context. The expectations about its effects are related to the supply of evaluation on the research quality provided by peers, which shall assure a high level of trust on judgments. Moreover, there is a wide awareness about the possibility that VTR results will be integrated in the Government decision-making on research funding and policies. If so, VTR shall become a starting point for the future development of the academic research assessment in Italy.

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