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R&D evaluation in Italy: recent developments

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Outline of the presentation



1. The evaluation system in Italy: main actors
2. The state of the art of evaluation
3. Evaluation of public research institutions and programmes
4. Future prospects
5. Concluding remarks

1. The evaluation system in Italy: main actors



The evaluation system in Italy: main actors



Ministry of universities and research

- ⌘ Committee for Research Evaluation (CIVR)
- ⌘ National Committee for the Evaluation of the University System (CNUSV)
- ⌘ National Agency for the Evaluation of Universities and Research (ANVUR)

Universities

National Research Council

Other research agencies

Ministry of economic development

2. The state of the art of evaluation



The European Trend Chart on Innovation (2007)



“Evaluation is a weakness of the Italian system”

“Most evaluation exercises are limited to monitoring and auditing”

“Proper evaluations that systematically assess the results and provide feedback for policy making are rather the exception than the rule”

“In most cases evaluations are carried out internally, either by the Ministries or by research agencies. The results of the evaluations are often available to the public but rarely discussed either among ministries or in public fora”

European Trend Chart on Innovation (2007)

Overall appraisal of policy making and evaluation practice

Policy making/evaluation practice	Benchmark	Ranking (1 to 5)				
		IT	FR	UK	DE	ES
Openness of the process of designing innovation policy (measures)	Policy development is undertaken through a partnership-based approach involving consultation of key stakeholders at all stages.	3	3	5	3	4
Quality of inputs to policy making (application of evidence-based techniques, use of evaluation results)	Policy design is systematically evidence-based and account is taken of evaluation results.	1	2	5	5	3
Regularity and transparency of policy monitoring and review processes	All major policy documents and instruments are the subject of a regular review involving stakeholder consultation.	2	3	4	5	3
The impact on innovation of developments and regulations in other policy field is appraised	A well-structured process exists for impact assessment of new regulations on innovation and/or innovation is taken into account as an issue in other policy documents.	1	2	4	5	3
Existence of coordination mechanisms (high-level councils, interministerial committees, etc...)	Well-organised coherent system of policy coordination at government and agency levels.	2	3	5	5	4
Existence of an evaluation culture in the field of innovation policy	Innovation policy measures are systematically evaluated at key milestone in their implementation.	2	2	5	4	3
External versus internal evaluations of innovation policy measures	Evaluations respect good practice criteria (systematically involve external experts, evidence-based, quality appraisal of evaluation reports, etc...)	1	5	4	4	3
Transparency and publication of results of evaluations	All evaluations are published and/or discussed in a public forum.	2	2	3	4	4

3. Evaluation of public research agencies and programmes

Evaluation of public research agencies and projects (CIVR)



⌘ Approach:

first self-evaluation (using mainly quantitative methods) and then an analysis of the information obtained to express quality ratings by CIVR (a top-down approach)

⌘ Problems:

incomplete information, patchiness, delay in fulfillment and difficulty of interpretation among a large variety of data

little room for participation and mediation

Evaluation of the “Plans for development of scientific and technological networks”

Evaluation of techno-scientific and socio-economic impact of project (percentages)

	Techno-scientific impact	Socio-economic impact
High	52,8	27,8
Medium	44,4	66,7
Inexistent	2,8	2,8
Impossible to assess	0,0	2,8
Total	100,0	100,0

Evaluation of the “Plans for development of scientific and technological networks”

Evaluation of predominant socio-economic impact of projects in temporal terms
(percentages)

	Research	Technology transfer and research infrastructures	Total
Short-term	25,0	8,3	19,4
Medium-term	54,2	58,3	55,6
Long-term	16,7	33,3	22,2
Impossible to assess	4,2	0,0	2,8
Total	100,0	100,0	100,0

Evaluation of the “Plans for development of scientific and technological networks”

Evaluation of predominant socio-economic impact of projects in spatial terms
(percentages)

	Research	Technology transfer and research infrastructures	Total
Local	12,5	33,3	19,4
National	54,2	41,7	50,0
International	33,3	25,0	30,6
Total	100,0	100,0	100,0

Evaluation of the “Plans for development of scientific and technological networks”

Contribution of each stakeholder to the development of the socio-economic impact of the project in the long term (percentage)

	Research	Technology transfer and development of research infrastructures	Total
Project beneficiaries	43	37	41
Firms	30	22	27
Local public institutions	6	20	12
National public institutions	13	13	13
Financial backers of application of results	3	5	3
Other persons	5	3	4
Total	100	100	100

Evaluation of the “Plans for development of scientific and technological networks”

Degree of significance of indicators in evaluation of socio-economic impact of projects (number of responses)

Indicator	Significant			Not significant Total	No response	Total
	Research projects	Technology transfer and development of research infrastructures	Total			
Patents and licences	14	6	20	14	2	36
Scientific publications in national journals	22	7	29	6	1	36
Scientific publications in international journals	19	7	26	9	1	36
Innovation-related turnover	16	9	25	9	2	36
Exports	6	6	12	21	3	36
New companies created (spin-offs)	11	7	18	17	1	36
Cooperation started	22	11	33	2	1	36
Creation of new jobs	18	9	27	7	2	36
Activation of new services	18	11	29	6	1	36

Evaluation of the “Plans for development of scientific and technological networks”



Main results:

- ⌘ a high impact of projects both from a techno-scientific and socio-economic perspective
- ⌘ research projects have a relatively short time scale in a national or international scenario, whereas transfer or infrastructure projects “pay” over a longer period of time in a predominantly local context
- ⌘ contribution of each actor to the socio-economic impact of the project: the research project only one third
- ⌘ indicators: different level of significance and stable over time

CIVR Evaluation of universities, research agencies, private research organisations (2005)



Main results:

- ⌘ 17,000 “research products” produced by 64,000 researchers
- ⌘ RAE methodology
- ⌘ 20 expert panels (151 panelists)
- ⌘ 6,700 field experts (75% Italian, 25% foreign)
- ⌘ Outcome: 30% excellent, 46% good, 19% acceptable, 5% below standard

CIVR Evaluation of universities, research agencies, private research organisations (2005)



Problems:

- ⌘ Only 50% of the total output
- ⌘ How the “research products” were singled out
- ⌘ Most of the “research products” had already been evaluated
- ⌘ Different views to be reconciled in the consensus reports
- ⌘ Interpretation of evaluation parameters left to reviewers
- ⌘ Specificity of individual panels to be reconciled with the common approach
- ⌘ Evaluation of products close to the market turned out to be particularly difficult

Evaluation of policies and programs using econometric analyses



- ⌘ An analysis of innovation policies using innovation data (CIS) on Italy and the Netherlands
- ⌘ An analysis of the impact of a specific measure for the financing of R&S in firms through a counterfactual method

4. Future prospects



National Agency for the Evaluation of Universities and Research (ANVUR)



- ⌘ It was first proposed to set up an Authority; later the Parliament passed a law setting up a government Agency
- ⌘ A long gestation period
- ⌘ After the Decree of April 2008, the Agency is still in the process of being set up
- ⌘ In the interim the minister for Research and universities announced that CIVR and CNUSV will be re-activated

The “Innovation Agency” in the framework of the Programme “Industry 2015”



- ⌘ Ex-ante evaluation
- ⌘ Evaluators (international experts, anonymity, confidentiality, conflict of interests)
- ⌘ Criteria (conformity to the objectives, S&T quality and degree of innovativeness, quality and competence of applicants, impact, quality of the industrial plan)

The evaluation of CNR Institutes



- ⌘ In the near future CNR will launch an evaluation of its R&D infrastructure (some 100 research institutes)
- ⌘ The method:
 - 1 General panel (16 members receiving euro 7,000)
 - 29 Field panels (125 members receiving euro 3,000)
 - site visits
- ⌘ Time frame: 6 months
- ⌘ Cost: 550,000 euro (800,000 UD \$)

Indicators to be used in the evaluation of CNR Institutes



Common indicators

Intellectual capital (research personnel, scientific output)

Relational capital (partnerships, educational activity)

Structural capital (infrastructure, technological platforms)

Economic capital (structure of the budget, sources of funds)

Production capital (cost of output)

Specific indicators

Innovativeness of research projects

Quantity and quality of output

Ad hoc indicators

Field Panels and Institutes

Department "Energy and Transportation"

Panel Institute	Physics	Chemistry	Material sciences	Environmental sciences	Industrial engineering	Information engineering
Energetics and interphases			*		*	
Plasma Physics	*		*			
Ionised gases	*				*	
Engines				*	*	*
Combustion				*	*	*
Advanced energy technologies		*	*	*	*	

5. Concluding remarks



- ⌘ Evaluation: a top-down process
- ⌘ Improvements over the last few years, followed by a standstill
- ⌘ Positive role of the European Union (both at national and regional level)
- ⌘ Impact of evaluations in a period of scarce resources
- ⌘ Some interesting initiatives to be started
- ⌘ Unexpected interest in public discourse and in media



Thank you