

Italy's reorganization of public investment appraisal: findings and perspectives for large projects and cohesion policy

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Abstract

There is a common perception that large projects are not only difficult to implement, but often unsuccessful, not generating the expected benefits, compared to the costs actually incurred. Large projects may succeed, fail or yield a reduced impact compared to expectations in terms of positive externalities. At the same time, it is very interesting to investigate the ways in which these effects are generated.

The first section of this paper analyzes the Italian legislation on planning and ex-ante evaluation of public projects, against a worrying decline of the corresponding investment of the order of 4% on average per year in the last decade. In the broad framework of territorial cohesion policies, the second section is dedicated to the not very positive experience in Italy of the European major projects of the past programming period 2007-2013. The third part compares the main studies that have highlighted the success and the risk factors of large public investment projects. A final section reviews the activities necessary to achieve a link between the levels of design and the implementation of a work and / or an investment program. The conclusions summarize a series of recommendations aimed at simplifying and speeding up the procedures of the interventions still in progress. They also list several measures that may be able to strengthen the capacity building and provide the necessary technical and operational support implementing public investment and regional convergence within the union..

1. Introduction

In Italy we have witnessed for many years a debate on the role of economic evaluation of public investments, so that various currents of thought have been created, including such topics of discussion as different tools and methods that can be applied. Over time, models and theories have also been formulated, as well as working groups focusing, for various reasons, on the activities related to programming, planning and design, but mostly aiming at optimizing the choices related to the scarcity of resources for public spending.

Legislative Decree 228/2011 directed all state administrations to adopt sector guidelines and a multi-year planning document (DPP) for public investment, with the aim of optimizing on the one hand the addresses programming, but also to apply the ex-ante design tools on individual investment, according to different methodologies for marginal and “non marginal interventions”,

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This is a working paper, and hence it represents research in progress. This presentation and the paper represent the opinions of the authors. It is not meant to represent the position or opinions of their job Institutions, nor the official position of any staff members. Any errors are the fault of the authors.

with the aim of achieving a better performance of public expenditure in terms of “social profitability”.

State administrations play a fundamental role, above all for large-scale works, much more than all the other public entities involved in public investment, facing however many problems on the times and costs of program and project implementation. For various reasons, almost a decade after the issuing of the aforementioned standard (thought already in fact with the Budget Law n. 196 of 2009) no administration has yet equipped itself with a valid instrumentation for the analysis, evaluation and implementation of public projects according to rigorous economic principles, and effective applicability.

The new Procurement Code, approved with Legislative Decree 50/2016, also reiterates the logical structure of the ex-ante economic evaluation of investments, where in Part V (Infrastructure and priority settlements), art. 201 provides for the use of the multi-year planning document, to identify infrastructural interventions and priority works, as general ordering and programming instrument for effective planning. As explained later, important innovations were subsequently introduced to the same Code, also with the recent Law Decree named "Unblock building sites", through the simplification of some tender procedures. On the programming and planning front, on the other hand, as well as on ex-ante project evaluation, the situation is still undefined and uncertain.

The link between the weakness of the evaluative analyses of the project life cycle and the infrastructure gap accumulated by Italy finds confirmation in a large part of the literature that for years has been studying the phenomenon (Loiero and Maiolo 2017; Politecnico di Milano and Ministry of Infrastructures and Transport, 2011). It is a recurrent paradox that closing this gap represents a constant initial promise as well as an ending regret of any new Government cycle.

A recent literature gives an interesting picture of the comparative quality of the ex-ante feasibility assessments of public works in the main European countries. According to these reviews in many European countries, such as France, Germany, the United Kingdom, the Netherlands and Sweden, planning tools are widely used, including the Cost-Benefit Analysis (CBA) for the technical and economic evaluation of the feasibility of public and / or public investment. It is of some interest to observe the main elements that are distant from the Italian context:

- Methodologies: all the countries observed have written and publicly available guidelines. Almost all of them provide the basic values to be used in the CBA (scenarios, quantitative indications about the main valuation parameters, such as social discount rate, time value, shadow prices and salaries, external costs, ...);
- Transparency of choices: an element that is lacking in the Italian case is transparency on the choices and assessments made. In the European panorama, particular attention is given to the presentation of the results: the English appraisal summary table, but also the German and Swedish ones, or the French “bilan socio-économique” make the results of the CBA public alongside the non-monetizable aspects;
- Concertation: forms of consultation and participation with local communities are envisaged to guarantee legitimacy, transparency and access rights to the various stakeholders. These moments not only facilitate the construction of a consensus around infrastructure projects, reducing conflicts and guaranteeing the feasibility of the work, but increase the quality of the infrastructure and improve the capacity for coordination between policies and sector programs.

BOX 1 – Legislative Decree 228/2011 and the regulatory framework for planning and evaluating public investments in Italy

The Legislative Decree was created to implement article 30, paragraph 9, letters a), b), c) and d) of the law of 31 December 2009, n. 196, regarding the evaluation of investments relating to public works, with the aim of promoting in the Public Administrations the good practice of planning and economic evaluation of public investments in the wake of legislation that had been partially implemented starting from law n. 144/1999.

This provision requires the central administrations to prepare the “Documento di Pianificazione Pluriennale (DPP)” (*Multi-year Planning Document*), containing the three-year investment program for public works and public utility, to be organized according to the indications contained in the subsequent Prime Minister Decree of 3 August 2012. Prior to the drafting of the DPP is the preparation, by the Administrations involved, of sectoral Guidelines concerning the quantification of needs and the ex ante and ex post evaluation of the financed interventions. The Ministries are required to draft the DPP by October 31 of each year and send it to CIPE; by December 31 of each subsequent year they must prepare a report on the state of implementation of the DPP itself.

The Prime Minister Decree of 3 August 2012 contains various elements that make it possible to facilitate the process of drafting the DPP through the drafting and processing, at the expense of each Ministry, of the Guidelines for drafting the Document. Prime Minister Decree of 3 August 2012 "model-type Planning Multi-year Document" underlines how: *"The resources indicated in the document are to be understood as the set of financial resources (of internal, community or private origin) destined to capital expenditure for the realization of public works by:*

- *the Ministry concerned;*
- *other subjects, to whom the resources - initially in the estimates of the Ministry itself - are transferred (eg contracting authorities, contracting stations, public law bodies, public companies, in-house companies, concessionaires, etc.). "*

In order to facilitate the preparation of the DPP, a Vademecum was elaborated containing details and operative indications for the drafting both of these guidelines, and of the DPP.

The Vademecum, available online, was sent to all the Ministries required to carry out the evaluation activities. The Vademecum has the following salient features:

- it is structured by promoting the internal consistency and completeness of the basic legislative apparatus constituted by the Legislative Decree of December 29, 2011, no. 228 and the DPCM 3 August 2012;
- it is proposed to transmit to the Administrations indications that facilitate the drawing up of concise, complete documents that facilitate analysis and guarantee internal consistency;
- it focuses on the tools and procedures for drafting the guidelines for the subsequent drafting of the DPP of public works and public utilities, divided into five main sections:
 - i. the. Framework of the Ministry's spending sectors;
 - ii. Ex ante evaluation of infrastructure and service needs;
 - iii. Ex ante evaluation of individual works;
 - iv. Criteria and procedures for the selection of works;
 - v. Criteria and procedures for the ex post evaluation of the public projects.

After the vademecum, an addendum was prepared, which also intends to provide some indications on the integration of principles and procedures for the evaluation of public and public utility works registered in the Ministries' estimates. This document addresses some issues related to the possible different origin of public resources used to finance public works, taking into account the role played by capitals and private partnership, as well as proposals for possible activities to be included in the guidelines and planning documents.

The main factors that hinder the Administrations, emerging from meetings aimed at collecting feedback for the implementation of the provisions of the legislation in force, can be summarized as follows:

- 1) public employees do not seem to have the specialist skills necessary to draw up the *Guidelines*, let alone the DPP;
- 2) there is a clear need for internal training aimed at encouraging the performance of the activities envisaged by Legislative Decree no. 228/11;
- 3) in the cases in which it is present, the Evaluation Committee often does not appear to possess the necessary professional skills to support the Administrations on a technical-specialist level;
- 4) a further shortcoming consists in the absence of structured internal circulation procedures of information flows, aimed at the verification of the various evaluation passages of the capital expenditure for the life cycle of the program / plan / project;
- 5) the Administrations appear to be characterized by an insufficient determination to intensify the pace of adjustment of procedures and internal structures to the new evaluation framework - an acceleration that would be more and more necessary due to the serious delays accumulated with respect to the deadlines prefigured by the Legislator.
- 6) the regulatory framework prefigured by Legislative Decree no. 228 presents a clear weakness in terms of *enforcement* of the "sanctions" which it also contemplates. In fact, the "threat" of not funding the CIPE candidate initiatives in the absence of the completion of the required evaluation procedure has so far never been implemented, despite the apparent prescriptiveness of the provision contained in Article 5, paragraph 3 of the Decree³.

To date, the only Italian Ministry that has published the Guidelines is the Ministry of Infrastructure and Transport, which in December 2016 included the document also validated by the Court of Auditors on its website. However, this Administration has not established a DPP on the basis of the same guidelines adopted.

2. The policies of territorial cohesion and the experience of "major projects" in Italy

European cohesion policies represent one of the major world examples of measures aimed at redistributing wealth and stimulating growth across regions, sub-regions and income groups within the union. They originate in the 1957 Treaty of Rome, which expressly refers to the reduction of disparities between regions, and are consistent with the provisions on the subject of substantial equality and autonomy of Municipalities, Provinces, Metropolitan Cities and Regions by the Italian Constitution (Article 3 and Article 119, respectively).

³ D.Lgs. 228/2011, article 5, paragraph 3: "*Le opere non incluse nel Documento o nelle relazioni annuali non possono essere ammesse al finanziamento, fatto salvo quanto previsto dall'articolo 153, commi 19, 19-bis e 20, del decreto legislativo 12 aprile 2006, n. 163, e successive modificazioni.*" The exception relates to public or public utility works offered to administrations by economic operators, to be carried out in concession or financial lease not present in the three-year planning, or in the planning tools approved by the contracting authority on the basis of current legislation.

The effectiveness of cohesion policies over the years has been much debated by economists and policy makers. Moreover, the empirical evidence is not unanimous in ascertaining the effectiveness of these policies aimed at the convergence between areas that are not very developed in the same region and between the regions themselves. The Senate Impact Assessment Office in July 2018 completed a document entitled “The Impact of Cohesion Policy in Europe and in Italy”⁴ which collects and summarizes important works carried out over the years. The focus is on the effects of cohesion policies between the territories of the member countries and on the consequences that the same policies have had also in the Italian regions (Petraglia, Provenzano, 2018). The main conclusions are:

- 1) The effectiveness of the policies undertaken can be improved through the redistribution of resources among the regions to which they are destined. This is based on the findings of decreasing marginal efficiency of the resources beyond a certain threshold. The conclusion underlines the need to take into consideration the heterogeneity of the specific regional context in which the investment takes place with the emphasis being placed on the role of Governance and Institutions.
- 2) As far as the Italian context is concerned, a fundamental aspect is the effective spending capacity by the institutions concerned. The literature shows a greater ease of spending European funds than national ones as well as greater effectiveness of investments financed by the former in terms of per capita GDP. This is attributed to lower institutional and bureaucratic difficulties as a result of a different governance rules for European funds. There are also asymmetries and delays in the process of convergence of Southern Italy due to the fact that public capital spending in the South is far lower than in North Italy.

We now report the case of ex-ante evaluation of the Major Projects (MP) programmed in the time frame of the 2007-2013 community programming, as a broad program of interventions shared in the larger framework of regional cohesion policies.

The data and information collected refer to the main preliminary phases the start construction of the project in the strict sense, as contemplated in Section 2 of the former EU Regulation 1083/2006:

- Programming, or insertion of the intervention in the Operational Program (OP) of a specific item indicative of the MPs and consequent approval of the OP itself.
- Notification of the activities undergone by the Managing Authority to the European Commission, with project documentation and request for co-financing to apply to the ESI Funds.
- Decision by the European Commission.

The picture that emerges on the MPs - at the closing date of the previous seven-year period - programmed at national level and partly submitted to the European Commission - is presented in Table 1 below. It reflects the 2007-13 programming cycle, even though some of the projects had already been formulated in the previous programming cycle 2000- 2006.

⁴ <http://www.senato.it/service/PDF/PDFServer/BGT/01075261.pdf>

Table 1 - The European “Major Projects” in the 2007-2013 programming cycle

Operational Program (National PON, and Regional POR)	programming cycle 2007-2013						programming cycle 2014 - 2020 *
	MP scheduled by 2007	MP notified during the programming period	MP decided in June 2012	MP decided in June 2015	Suspended	MP riding programming 14-20 *	
POR FERS LOMBARDIA	1	1	0	1	0	1	0
POR FERS TOSCANA	2	2	1	2	0	0	0
POR FERS LAZIO	3	4	0	0	3	0	1
POR FESR CAMPANIA	26	20	5	14	3	16	1
POR FESR BASILICATA	1	1	0	0	0	1	0
POR FESR CALABRIA	11	6	2	5	5	2	0
POR FESR PUGLIA	7	7	2	6	0	3	0
POR FESR SICILIA	17	12	1	11	1	5	4
POR FESR SARDEGNA	4	1	0	1	3	1	0
POIN ATTRATTORI CULTURALI	1	1	0	1	0	1	0
POIN ENERGIA	4	1	0	1	3	0	0
PON RETI E MOBILITA' **	18	17	11	15	3	8	2
TOTALE	95	73	22	57	21	38	8

(*) provisional data, subject to possible changes during the approval and implementation of the OPs.

The " PON RETI E MOBILITA' " is re-named in " PON INFRASTRUTTURE E RETI " with the new 2014-20 programming cycle.

Source: processing and updating of data provided on Loiero, Maiolo (2017)

The total number of MPs programmed is 9, some of which have been suspended on the occasion of the various reprogramming of the OPs and / or replaced with other interventions⁵. The overall value, for the MPs whose cost is known, is equal to over 17 billion euros (about 20% of the financial resources available in the 2007-13 period and 35% of the European Funds including national co-financing). For some of them in fact the cost is not quantified, although present in the Ops.

The MPs notified to the Commission are only a portion (77%) of those programmed. As shown in Table 1, at the end of the programming period, the MPs approved by the European Commission are 73 and amount to 60% of those planned.

⁵ For many MPs withdrawn from submission, one of the main reasons was the insufficient planning documentation presented to the EC in the notification phase.

In this respect, the figure for the POR of Campania stands out: of the 26 planned, 20 are those notified and only half of these seem to have taken the path of co-financing. The ROP strategy and the choices of direction that have been gradually implemented (recall that a good part of the POR implementation strategy has been concentrated on the MPs) does not seem to have produced the desired results so far.

The data used above were also re-aggregated by classifying the MPs in 9 project typologies, articulated both on a regional (POR) and a national (PON) basis. There is a clear dominance of railway interventions, in terms of both the number of projects and absorption of resources: on a national basis, in fact, 22 GPs out of 66 belong to this category, with a cost of around 8 MLD € out of a total of 15 (almost 55 percent) and an average cost of around € 350 million per project.

Table 2 - Reconnaissance of the MPs approved or in the process of being approved, aggregated by sector (amounts in euros)

Sector	n. of MP	Total cost	Average cost per project
Rail transport infrastructure	22	7.671.392.163	348.699.64
Road transport infrastructure	10	3.481.328.102	348.132.810
Energy sector infrastructures	2	612.780.144	306.390.072
Urban railway transport infrastructures	3	420.794.351	140.264.78
Works and social infrastructure	7	871.060.736	124.437.248
Air transport infrastructure	1	114.930.000	114.930.000
Nodal transport infrastructures	5	532.739.175	106.547.835
Telecommunications and information technology infrastructures	6	600.022.265	100.003.71
Environmental infrastructures and water resources	10	828.035.688	92.003.965
Total / average	66	15.133.082.624	186.823.340

Source: Loiero, Maiolo (2017).

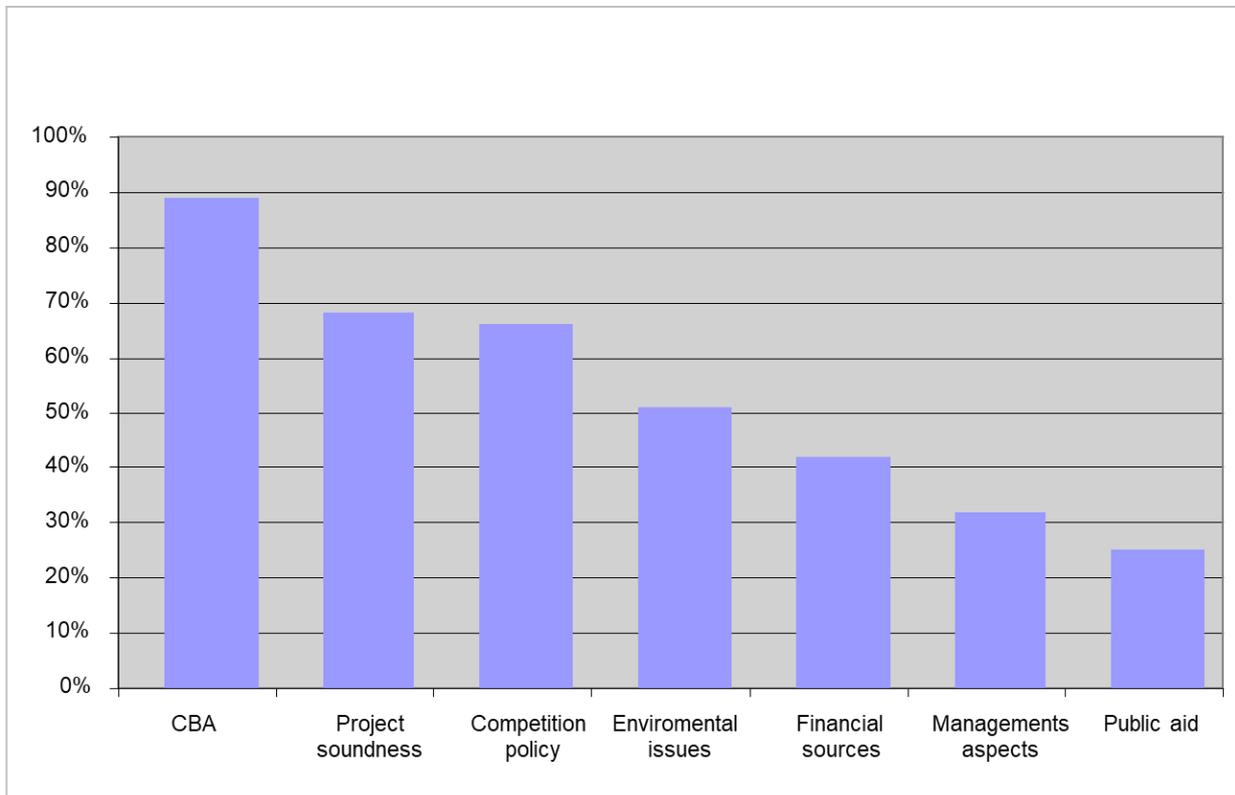
What emerges from the "case by case" analysis of the MPs is the difficulty, on the part of the sponsoring administrations, to start and conclude in a relatively short time the preliminary procedure requested by the Commission to approve the financial contribution to the large projects presented (the so-called "Decision" phase).

In order to broaden the evaluative view on what really happens in this preliminary project cycle, we analyzed the observations that the EC carries out on each MP in the two months it has available to approve, except for the cases where there are no elements that allow the transition to the final decision. The observations are grouped by topic : Cost-Benefit Analysis, Project Planning, State Aid, Financial Analysis, and so on.

As shown in Figure 1, the most critical issues concern the aspects related to the Cost Benefit Analysis: almost nine Large Projects out of ten have had "problems" on the CBA (for 33 the problems to be developed and clarified concerned the analysis of the demand, for 32 financial analyses, and so on) and almost seven out of ten presented critical issues relating to the project or

internal market. In one case out of two the investigations conducted by the Commission reveal problems with environmental assessments. Less frequent, although still present (and sometimes more impacting on the overall evaluation of the MP by the European Commission Services) are the observations relating to the formulation of the MP's financial plan, the management system of the interventions carried out, the presence of Aids of State.

Figure 1 - Frequency of European Commission observations on MPs for different types



Fonte: Loiero, Maiolo (2017)

As for the previous programming cycles, a new guide was also prepared by the EU Commission for the formulation of the major projects, for the current 2014-20 year⁶. There are two main innovations: (i) some technical-methodological aspects and (ii) consideration of governance tools for the facilitation process, from the ex ante evaluation, to financing, to its implementation.

A further exercise of evaluative analysis on major community projects was carried out by OpenCoesione (2018), in which it emerges that in the monitoring system data a high differential between the loans and payments persists for these interventions. This makes it possible to demonstrate, in some way, as also anticipated in the introduction, the problematic phenomenon of the delay in completion times compared to what was initially planned, but also to the need to strengthen the monitoring system itself.

To confer greater planning and implementation capacity to the interventions of the cohesion policies in Italy, the Agency for Territorial Cohesion was established with the decree law n. 101/2013, with the aim of supporting and promoting development programs and territorial cohesion by supporting central and local administrations in the planning, implementation and monitoring of interventions.

⁶ http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cba_guide.pdf

The responsibilities of the Presidency of the Council of Ministers in this sense, carried out with the support of the Agency, consist in planning the use of the EU structural funds and the Development and Cohesion Fund (FSC) fed with national resources, activating contracts and accelerate public works interventions (also with the help of other in-house agencies of the State, such as Invitalia Spa, Sogesid, as well as specific task forces that operate in direct contact with local authorities), monitor projects and evaluate results.

The aforementioned agencies may also be upgraded if the conditions are in place to support the beneficiaries of interventions for which public procurement competences are required even in sectors previously considered to have a low propensity to spend, not only for the transport sector seen for the major community projects, but also the interventions of the integrated water service, interventions for securing and protecting the territory, urban regeneration interventions, for which it is possible to receive direct assignments from the central and territorial administrations, performing both functions implementation and support.

A more in-depth reflection on the recent political, structural and administrative developments that have concerned Cohesion is provided by Amorosino (2018), while on the strengthening and requalification mechanisms of capacity building and the consequent regulatory reorganization for the strategic sectors mentioned above, it is a plan for the economic recovery of the South was prepared at the Ministry of Economy and Finance in the spring of 2019.

BOX 2: The role of evaluation and cost-benefit analysis for large projects under of uncertainty

Cost-benefit analysis (CBA) is a rather complex methodology of project evaluation, which is nevertheless necessary for an efficient public investment policy. Regardless of the outcome of the individual applications, CBA creates a need for in-depth quantitative assessments which is in itself a positive element. An economic analysis of large and complex projects, however, cannot rely exclusively on the partial equilibrium considerations of ordinary CBA. It typically requires a methodological approach looking at the economy as a complete system of interdependent components (industries, households, investors, government, importers, exporters). These interdependencies depend both on the linkages created by industrial value chains and on the multiple connections created by markets, trade and the income formation and distribution institutional mechanisms. In this context, the demand and supply shocks created by large investment create ripple effects throughout the system that can only be meaningfully reconstructed if one has a comprehensive and articulated picture of the economy.

A computable general equilibrium model (CGE) is the analytical tool of choice to attempt to address the challenge posed by the evaluation of such complex issues (Perali and Scandizzo, 2018). Although it can have many different specifications, a CGE presents several properties that make it fit to this purpose. First, it is based on a consistent account of the economy's interdependencies, based on recognized international standards. Second, it incorporates the circular flow of income in a way that is broadly consistent with a variety of economic theories. Third, it may accommodate income distribution and other structural elements of the economy's institutional structure. Fourth, it may provide a flexible representation of value creation in the economy, including the contribution of the traditional factors of production, such as land, capital and labor, and of natural resources, such as water, biodiversity, and energy.

CBA and the impact analysis performed through CGE can contribute to a more extensive use of the best international project management practices, unfortunately still not sufficiently widespread in our country. The cost-benefit analysis is based on the idea that projects can be evaluated as generating cash equivalents, expressing the benefits and costs in terms of a monetary account unit (eg the reserves of the Central Bank), and from the point of view of the creation (or destruction) of value caused by the project, and of the effects on the audience of the possible positive and negative beneficiaries.

It is also necessary to take into account the fact that the estimates are affected by measurement errors and that the future is uncertain. National and international manuals (including an excellent European guide) and various academic texts are available online, see for example the book "Assessing Uncertainty, the Cost Benefit Analysis of the 21st Century", by Pennisi and Scandizzo (2003), where the uncertainty conditions and the need to assess risks and opportunities created by the project are taken into particular account.

However, the conclusions of any analysis depend on the hypotheses made, the available data and the interpretation of the results. It is up to policy makers to make decisions taking into account the indications of the analyzes.

When dynamic uncertainty (that is uncertainty varying with time,) is present, project evaluation should be approached using the so-called real options technique (Scandizzo, Maiolo, 2005b). In the special case where the project is already being implemented, for example the so-called exit option should be evaluated as the faculty, but not the obligation, to suspend, cancel or modify the project at any time during its implementation.

In general project options (called real options in analogy, but also to distinguish them from financial ones), should be valued according to the so-called extended net present value method, in order to take into account the costs and benefits associated which would be realized by abandoning, adopting, canceling, suspending or redesigning the project.

3. The major public investment measures and the reasons for the infrastructural gap

There is a common perception that large investment projects are not only difficult to realize, but often unsuccessful, not generating the expected benefits, compared to the costs actually incurred. This is a rather pessimistic notion, given that this category of interventions tends to concentrate the greatest resources.

While in principle one may find that the notion of success should be independent on project size, economic theory predicts that different economies of scale, positive and negative, can be associated with different types of enterprises and economic activities. Thus, when diseconomies of scale are associated with the activities subsumed by the project, we should expect lower average results in larger projects than in smaller ones. Conversely, we should expect the opposite to happen, for positive economies of scale, such as for example in large communication network projects.

Literature agrees that large investment projects tend to present some special discrepancies between predictions and realizations:

- Realized costs are larger than planned costs by a factor varying from 50 to 100 percent, and in several cases they are twice the costs initially estimated.
- Prevision demand side forecasts are overestimated by 20 percent to 70 percent compared to effective user usage.

- The environmental impact, following the implementation of the intervention is significantly different from that expected, even though an adequate performance audit service is often feasible only with considerable difficulties.
- The models of local government and community cooperation, both on a local, inter-regional and international basis, do not allow the optimal use of the productive capacity provided by the project, thus ending up reducing its effectiveness.
- The scenarios hypothesized before the realization of a large project tend to change over time, especially when the time lag between the design phase and commissioning is considerable.

Tabish and Jha (2011), through a survey with factor analysis, identified, among 36 project variables to define four possible success factors for large public works projects in India, 4 major clusters: (i) sensitivity and respect for rules and regulations; (ii) ex ante planning of the project and clear definition of the objectives; (iii) effective public debate between project participants; (iv) efficient monitoring and control system also entrusted to the outside.

A similar study (Ika, Diallo and Thuillier, 2012) was conducted on a set of major projects through survey related to the success of World Bank projects, with particular reference to the relationship between the critical factors of success and failure of the project. The analysis showed five factors (monitoring, coordination, planning, training and institutional environment) positively correlated to the success of the project. While project control and management are obviously decisive factors for project success in an operational perspective, the authors believe that attention to the initial phases is of utmost importance, since it may include seven crucial factors: (i) a clear vision of the objectives and a strong political will; (ii) a structure responsible for the formulation of independent and stable design over time; (iii) a charismatic project manager with high professional skills; (iv) a solid financial approach from the initial phase of the project and based on a realistic business model; (v) appropriate procedures for legal consents with possible audit options; (vi) a broad and completely representative stakeholder of the various positions, with an open communication management model; (vii) a rigorous process of managing any changes and project reviews.

While the factors mentioned above lead to the success of a major project, Pinto and Kharbanda (1996) identify 11 factors that, on the contrary, can lead to its failure:

1. ignoring the context of the project and its characteristics, including the behavior of the interested parties;
2. push a new technology to market too quickly;
3. not planning the "possible among the possible problems", for example through the analysis "and if ...";
4. when problems occur, focus on the most visible problem ignoring everything else especially when there is in fact more trouble;
5. not encourage projects based on new ideas because of their uncertainty, with the risk that inertia could kill innovation;
6. not carry out ex ante feasibility studies;
7. not to admit that a project is a failure, continuing to push the project even if factors such as functionality, bad management or incorrect calculation affect the project itself;
8. not conduct post-failure reviews, losing the opportunity to learn and understand the main reasons for the failure;
9. allow bureaucracy and internal governance to be more important than project success; not worrying about the existence of project trade-offs;
10. let the political influence modify the decision-making process;
11. choosing a non-charismatic and unqualified project manager.

As mentioned, each major project deals with the characteristic of singularity if considered in its unity, or on the contrary of plurality in cases where it is a specific sectoral plan of interventions that can be considered with the definition of a large project (especially if one thinks of the projects that can make up the redevelopment of the integrated water system, an extraordinary maintenance plan for the roads, and so on). In light of this, it is difficult to make a list of the general success and failure factors that can be applied to each major project. It therefore becomes essential to understand the specific aspects to which one or more factors characterize the scenario in order to enhance the awareness of the complexity that will have to be faced in order to give greater probability of success to the implementation of major projects.

The following table (Table 3) reports a reasoned survey on the analysis of risk and success factors that various authors have identified.

Table 3: Analysis of risk and success factors for major projects

success factors	risk factors
<ul style="list-style-type: none"> • Awareness; sensitivity and respect for rules and regulations; planning and planning ex ante and clarity of objectives; stakeholder participation in all decision-making levels; external monitoring and control system (Tabish, Jha, 2011). • Monitoring; coordination; design; capacity and institutional depth (Ika, Diallo, Thuillier, 2012). • Clear mission; support to top management; systematic preparation of programs and plans. Constant comparison with the customer; personnel Management; efficient technical assistance. Adequate communication plan (Pinto, Mantel, 1990). • Clear and achievable project objectives; presence of technological innovation; proactive involvement of local communities; need for a shared program (Turner, Anbari, Bredillet, 2013). • Project outline; clear operational objective; support to senior management; financial support; market dynamics analysis; skilled labor and organizational skills; clear identification of the project's profitability; information and communication channels; project review (Cleland i King, 1983). 	<ul style="list-style-type: none"> • Absence of post-failure reviews; overlap between bureaucracy and internal corporate activities and project success; little attention to the trade-offs that can be generated by the project; political influence on decision-making processes; choice of a non-charismatic and / or poorly qualified project manager (Kharbanda, Pinto 1996). • Absence of the public debate; untrained personnel; lack of technical and operational roles; (Pinto, Mantel, 1990). • Izio Prejudice to optimism; strategic misrepresentation; inefficiency and lack of debate among stakeholders (Flyvbjerg, 2011). • Inability to program, plan and design according to a logic of interdependence; superficiality in the ex-ante economic evaluation (Loiero, Maiolo, 2017). • Costs and delays in delivery of the works, absence or incorrect formulation of the cost-benefit analysis; overestimation of the ex-ante demand, absence of long-term planning (European Court of Auditors, 2018).

Source: our elaboration on various surveys

4. The link between the design and implementation of public investments

A healthy and virtuous behavior to maintain during the main phases of the planning and implementation of an intervention, based on the identification of the main categories of factors that characterize its success should concern: competence, development and management of stakeholders. These are the factors that have the highest influence of positively affecting the success of an intervention.

The performances of an intervention are not per se only related to the project itself. The project also concerns the stakeholders (stakeholders) and the society in which it is implemented. The nature of the organization as well as stakeholder satisfaction must be taken into consideration. The interested parties represent all the actors that the project managers and the clients cannot ignore while planning, planning and implementing a project, otherwise defined as all the individuals or groups that have one or more specific interests in the project or are interested by the result.

On the other hand, to ensure that the project leads on the one hand to the expected result, and on the other hand is managed well, the skills involved must be addressed. As more institutional representatives adopt sound project-oriented approaches and consequently increase their needs by those responsible for them, there is a growing interest in the competence of project managers as well as in the standards attached to development and evaluation.

The word competence originates from the Latin word "competentia" which means "authorized to judge" and "has the right to speak". Competent project managers are important for orchestrating all activities related to the project. Spencer and Spencer (1993) have argued how competence has intrinsic underlying characteristics: "competence is a fairly deep and lasting part of a person's personality, causes or predicts behavior and performance of an initiative".

What lessons from the international experience mentioned can be drawn for Italy? What is the situation recorded in the formulation and management of large investment projects in the national territory and what will be the programs and plans that will allow us to exploit the best success factors for the investments planned in the future?

For the present and the future, even before being able to define the objects, we can consider the resources allocated in the various budgets, which allow us to quantify the resources allocated for public investments for the period 2019-2033 at about 250 billion euros of expenditure. To these must be added about 100 billion euros of public investee companies, a third of which could be spent in the five-year period 2019-2024.

As is known, it is not sufficient to program the resources for public investments, but it is necessary to pursue a valid approach so that they are spent and destined to valid interventions to support and consolidate the economic development of the territories. To this end it is necessary to involve the public structures that in various capacities have the competences already foreseen and specifically set up by the State, as well as to identify the areas that can be object of opportune strengthening. An adequate coordination activity may include:

- a) The attributions and roles of the existing structures (Agency for territorial cohesion, Design structure at the State Property Agency, various in-house technical assistance and central purchasing companies, central and regional Evaluation Units, mission Structures).
- b) The respective attributions to the Ministries of direction and supervision.

- c) Start of a technical table to create a system between the centers mentioned above, also taking into account other resources (personnel and organization) that the Public Administration has for the evaluation, verification and implementation of public investments.
- d) Identification of possible areas of activity (subject / competence matrix).
- e) Structuring of a matrix of intervention priorities (subjects / objects / priorities).
- f) Identification of coordination and collaboration tools between the structures (by area of competence / subject / object of the interventions).
- g) Structuring of reference tools (manuals, procedures, guidelines), so as to facilitate the start-up of specific activities.

As discussed in Scandizzo and Napodano (2010), the most important characteristic of the Italian model of public investment management (PIM) is the process of expansion and decentralization that project planning and evaluation has been undergoing since the 80's. In particular, in a direct application of EU guidelines, Italy used the option given by Art.3 of the EC Regulation 1083/2006; including European Territorial Cooperation within the Italian National Strategic Reference Framework. Therefore:

'All national aspects concerning the strategic guidance and the implementation of the programmes in which Italy participates are dealt within the National Strategic Reference Framework, which was formally adopted, in Italy, by a decision of the CIPE (Interministerial Committee for Economic Planning), and in the acts implementing the NSRF'⁷.

The regionalization of public investment, pursued both through constitutional reforms and EU regulations, however, has been carried out with mixed results. Regional governments have been challenged by the requirements of project planning, the rigorous process of design and evaluation within the EU system and the supplementary provisions of the national system, as specified in the law 144/1999, the law 443/2001 (the so called Objective Law) and the various revisions of the law on public procurement, i.e. the so called ("Codice degli Appalti" i.e. Code of Procurement for Public Works) or unified collection of norms on the procedures to be followed in the planning and implementation of public works.

Among other provisions, Law 144/1999 was an attempt to set up the foundation of the project cycle by formally defining the feasibility study (FS) as the centrepiece of the process of project design and ex ante evaluation. Thus, not only the law recognized FS as the starting point of project selection and analysis in the public sector, but tried also to encourage its application by providing a series of incentives to the administrations that engaged in project planning by investing in proper FS operations. The network of evaluation units followed up on these original provisions by issuing a manual that aimed to give guidance to the various evaluation units as well as to the professionals in the field, on how to approach, according with a standardized and rigorous methodology , the problems encountered in the FS. In particular, the manual looked at the problems of project design and economic and financial analysis, offering basic theory and practical advice.

⁷ <http://www.dps.tesoro.it/qsn/qsn.asp>

In spite of these initiatives, the attempt to systematically enact the project cycle within the public sector has met only with partial success for several reasons. For one thing, the law did not provide sufficient resources to finance the feasibility stage of the project cycle, but only weak incentives to the administrations that chose to follow that route. As a consequence, FS were often inadequate, as the professionals charged with them - typically architects or engineers with no training in cost benefit analysis - were not adequately paid nor did they have sufficient incentives to study and absorb the methodology.

Second, the definition of feasibility study provided by the law was not sufficiently detailed to be interpreted correctly without the framework of an appropriate theory of project evaluation. As a consequence, many feasibility studies produced under the umbrella of the Structural Funds were either broad attempts of regional planning (“plans without projects”) or very restrictive project designs (“projects without plans”). Mostly missing were instead the characterizing FS features, allowing the evaluation of the best technical alternatives and the economic and financial appraisal of the solution proposed.

Third, while Law 144 requested the feasibility study to be made, the various procurement laws and ultimately the Code for Public Works requested a preliminary project to be completed in order to start the project process. This twofold requirement was variously interpreted, but has ultimately had the consequence of complicating the early analysis of the project, for which not only rough economic and financial information, but also specific designs and dimensioning data are deemed necessary. Rather than accelerating the disbursement of money committed to project financing, therefore, the most recent years have witnessed the accumulation of further delays on one hand, but has also promoted the preparation of several projects with only token feasibility analysis. This has been due to the economic and time requirements of the feasibility study, the combination with some form of preliminary project design and the chronic under-financing of the early stages of the project cycle, now dramatized by the new documentation required.

Project evaluation as a systematic government activity was started in Italy with an article in the 1980 financial bill, which established both a special fund for public investment and a central evaluation unit (called “Nucleus of Evaluation of Public Investment”). This innovation seemed to slowly take a hold on the Italian bureaucracy and procedures, even though its main impact was on the evaluation rather than the other phases of the project cycle. A considerable improvement in the project management system was achieved in 1999 through the approval of law 144/99, which designed the main steps of the project cycle, formally defined the feasibility study as a critical document to proceed to appraisal and provided for the constitution of an evaluation unit in all major ministries and in all regional governments. The law also established a national network of evaluation units, with its own financing endowment, to manage a centralized project information system, support interaction and facilitate communication among different ministries and units. However, vanishing political and financial support by the network in the following years, progressively reduced the practical impact of the law.

In spite of the progress made by Italy on the evaluation front, project management leaves much to be desired, since the progress made for project design and appraisal is not matched by comparable advances in the field of performance evaluation, monitoring and ex post analysis. Even though public investment management tasks have been identified by several laws to be to set up and manage a national monitoring system, it has proven extremely difficult to come up with an efficient data base for public projects, as results have been hindered by lack of money and expertise and widespread reluctance on the part of project managers to adhere to consistent protocols. The dilation of implementation times caused by overlapping national and European regulations have aggravated the problem of a project cycle essentially uncontrolled except for the feasibility-appraisal stage.

5. The economic evaluation of public investments through the social accounting matrix (SAM)

This section reports on the results of a Computable General Equilibrium Model (CGE) based on a regionalised Social Accounting Matrix (SAM) to assess which sectors and investment projects may have the greatest economic impact, with particular reference to the macro-area of the South.

In view of the data collected on the sums allocated in Italy for investments and not yet committed to specific projects, a simulation was conducted on the allocation of the Development and Cohesion Fund (Fondo Sviluppo e Coesione - FSC) and the possible economic impact. Further simulations are also represented through the use of the SAM based CGE model. These include the main expenditure components currently covered through the Development and Cohesion Fund, and other policies such as the (Special Economic Zones or SEZ) and tax credits. Among the various economic policy instruments in favor of the South, the latter appears to be among the most important ones for interventions in the areas of new technologies with the activation of an important leverage on private sector investments.

A review of the resources that Italy can boast in its portfolio leads to quantify for the next fifteen years important volumes, amounting for the whole country to more than 450 billion euros. From the audits carried out through the consultation of the data of the General Accountancy of the State extrapolated on the basis of a few reasonable hypotheses, less than a quarter of them (just over 100 billion euros) are committed to date. For the South, the total resources available for this period amounted to about 240 billion euros, of which only 62 would be engaged in the current situation (Table 4). The table below contains our assumptions for the estimation of each expenditure component.

Table 4 - Review of resources available for Public Investment in Italy

<i>(billions of euro)</i>	reference period	National resources		Overall resources planned for the South	
		Scheduled	Committed on 5/30/19 (our estimate) *****	Scheduled (a)	Committed on 5/30/19 (our estimate) ***** (b)
Fondo Amministrazioni Centrali (c. 95 - Legge di Bilancio 2019)*	periodo 2019-2033	42,70		14,52	
Fondo Enti Territoriali (c. 122 - Legge di Bilancio 2019)**	periodo 2019-2033	35,10		10,53	
Risorse già previste in Bilancio (RGS, settembre 2018)**	periodo 2015-2030	112,03	22,41	33,61	6,72
Fondo Sviluppo e coesione	2014-2020	59,81	8,97	47,85	7,18
Fondi SIE e cofinanziamento risorse ordinarie ***	2014-2020	84,40	67,52	59,08	47,26

Fondi SIE e cofinanziamento risorse ordinarie ****	2021-2027	97,06		67,94	
Piano Impresa 4.0 **	2018-2030	9,80	1,96	2,94	0,59
Messa in sicurezza di edifici e territorio; mitigazione rischio idrogeologico (c. 107; c. 134; c. 139; c. 1028 - Legge di Bilancio 2019)**	2019-33	9,90	0,99	2,97	0,30
Piano nazionale idrico (c. 155 - Legge di Bilancio 2019)**	2019-2030	1,00	0,10	0,30	0,03
TOTALE		451,80	101,95	239,74	62,08

(*) Resources foreseen in favor of Southern Italy estimated at 34% of the total planned, in implementation of the Legislative Decree 243/2016 art. 7bis "Principles for territorial rebalancing"

(**) Resources foreseen in favor of Southern Italy estimated at 30% of the total planned, in line with what has been done so far in the allocation of ordinary resources

(***) An incidence of 70% in favor of Southern Italy is estimated for resources on cohesion policies

(****) The estimate of new resources for the EU 2021-2027 programming cycle takes into account a 15% increase compared to the resources allocated in 2014-2020

(*****) For some expense components, there are no updated data, therefore an estimate was made regarding the following commitments: i) Resources already included in the 20% Budget; ii) Development and cohesion fund 15%; iii) 80% Sie funds and national co-financing; iv) Business Plan 4.0 20%; v) Securing the territory: 10%; vi) National 10% water plan.

Based on this first reconnaissance framework of the resources available for investment projects, two scenarios for possible deployment of the Development and Cohesion Fund were designed for economic impact simulation: the first takes into account a commitment of resources on the basis of what has already been assumed in the institutional resolution of the same (CIPE 26/2018) (Table 5).

Thematic areas	I scenario of division / reprogramming of resources for Southern Italy (***)					
	2019	2020	2021	2022	Still to be committed	
1) Infrastructure	8.128,88	8.128,88	4.645,08	2.322,54	23.225,38	57,11%
2) Environment	2.323,45	2.323,45	1.327,69	663,84	6.638,43	16,32%
3a) Economic Development	2.538,69	2.538,69	1.450,68	725,34	7.253,40	17,83%
3b) Agriculture	142,18	142,18	81,25	40,62	406,24	1,00%
4. Tourism, cultural heritage	877,97	877,97	501,70	250,85	2.508,48	6,17%

5. Human Capital (Employment, inclusion, education)						
	191,90	191,90	109,66	54,83	548,30	1,35%
6. Capacity building of public administration						
	31,70	31,70	18,11	9,06	90,56	0,22%
7. Other resources (without them 725,22 bln/€) o not yet assigned (5.131,90 bln/€)						
Totale	35%	35%	20%	10%	40.670,80	100,00%

(***)The resources still to be committed are divided evenly according to the quota not yet assigned between the thematic areas, maintaining the same weight as the current programming

The second scenario takes into account an alternative plan of commitment of the resources still available (Table 6), concentrated in the thematic areas that, based on maximizing the value-added multipliers of the SAM model utilized , i.e.:

- transport infrastructure and related sub-sectors (roads, railways, sustainable mobility);
- environment (water and smart grid);
- Innovative technologies for communication and competitiveness;
- public and private assets and buildings for urban development and regeneration.

These thematic areas also appear to offer greater opportunities for investments in education, in all school and professional levels, and capacity building among employees of the Public Administration and professional establishments.

II scenario of division / reprogramming of resources for Southern Italy						
Thematic areas	2019	2020	2021	2022	Still to be committed	
1. Infrastructure	8.128,88	8.128,88	4.645,08	2.322,54	23.837,94	58,61%
2. Environment	2.323,45	2.323,45	1.327,69	663,84	6.813,52	16,75%
3.a Economic Development	2.538,69	2.538,69	1.450,68	725,34	7.444,70	18,30%
3.b Agriculture	142,18	142,18	81,25	40,62		
4. Turism, cultural heritage	877,97	877,97	501,70	250,85	2.574,64	6,33%
5. Human Capital (Employment, inclusion, education)						
	191,90	191,90	109,66	54,83		
6. Capacity building of public administration						
	31,70	31,70	18,11	9,06		
7. Other resources (without them 725,22						

bln/€) o not yet assigned (5.131,90 bln/€)						
Totale	35%	35%	20%	10%	40.670,80	100,00%

In this impact analysis, a scenario that tends to describe the composition of the remaining investments of the FSC 2014-2020 for the South is compared with one identifying the sectors that may be subject to an alternative re-targeting of resources in the face of new programming. In this second scenario, the distribution of resources takes place according to a different distribution, as shown in the following Table 7 .

Table 7 - Assumption of the FSC division in the South (according to the second scenario)

Thematic areas	billion euros	Allocation Hypothesis for Investment (SAM capital good producing sectors) in South Italy	miliardi di euro
Transport infrastructure	20	Land transportation	10
		Marine and Water Transport	10
Environment	8	Water and Hydrology	8
Innovative Technologies for Communication and Research	6	Research and Development	3
		Communications	3
Public Building , Land use and Urban Regeneration	4	Constructions	3
		Real estate activities	1
Capacity building and education	2,67	Education and professional training	1,67
		Professional activities	1
Totale	40,67		40,67

Starting from this disaggregation, the test conducted was to enter as an exogenous investment shock based on capital expenditure of "producer sectors" as represented in the Social Accounting Matrix for the South and identified on the basis of their value-added multipliers.

According to these multipliers, all sectors, the environment should be a primary target of interventions, businesses will need to be supported, including through forms of tax credits, in the field of scientific research and communications technology services and interventions aimed at redevelopment of buildings and urban regeneration would mainly act by mobilizing the real estate and construction sector. Interventions to consolidate capacity building and training will be most effective through resources devoted to education and professional activities.

The results of the impact analysis are presented in Table 8 below and support the need for reprogramming the existing resources, with the possibility of achieving greater added value and personal incomes, with respect to the present allocation, with greater probabilities that the projects could be successfully implemented.

Tabella 8 - Results of the economic impact analysis of the resource in the South of Italy still to be committed

(billions of euro)

	I SCENARIO (a)	II SCENARIO (b)	b-a	
Value added				
Unskilled work in South	12,02	11,57	-	0,45
Qualified work in South	16,71	17,44	-	0,73
Capital in South	26,02	29,07	-	3,05
Unskilled work in Centre-Nord	0,34	0,29	-	0,05
Qualified work in Centre-Nord	0,69	0,59	-	0,10
Capital in South in Centre-Nord	1,30	1,12	-	0,18
Total	57,06	60,07		3,01
<i>which South</i>	<i>54,74</i>	<i>58,07</i>		<i>3,33</i>
<i>which Centre Nord</i>	<i>2,32</i>	<i>2,00</i>	-	<i>0,32</i>
Total Multiplier	1,41	1,48		0,07
Multiplier of South	1,35	1,43		0,08

Institutions (families and enterprises)

Total	84,49	89,61		5,12
<i>which South</i>	<i>80,74</i>	<i>86,38</i>		<i>5,64</i>
<i>which Centre Nord</i>	<i>3,75</i>	<i>3,23</i>	-	<i>0,52</i>

Production

Agriculture South	3,15	3,31		0,17
Industry South	34,65	32,93	-	1,72
Constructions South	17,08	5,58	-	11,50
Services South	96,63	109,11		12,48
Agriculture Centre-nord	0,03	0,03	-	0,00
Industry centre-nord	3,48	2,99	-	0,49
Constructions centre-nord	0,04	0,04	-	0,01
Services centre-nord	4,06	3,49	-	0,57
Total	159,12	157,48	-	1,63
<i>which South</i>	<i>151,51</i>	<i>150,94</i>	-	<i>0,57</i>
<i>which Centre Nord</i>	<i>7,61</i>	<i>6,55</i>	-	<i>1,06</i>

5. Conclusions

It is clear that the regulatory framework prefigured by Legislative Decree no. 228 presents an evident weakness, at least in terms of enforcement of the "sanctions" which it also contemplates. This depends, *inter alia*, on the fact that the "threat" of not financing the CIPE candidate initiatives in the absence of the completion of the required evaluation procedure has so far never been implemented, despite the apparent "prescriptiveness" of the provisions by law.

A structural weakness thus persists in the *ex-ante* phase of public spending, in relation to programming and planning, as well as the *ex-ante* evaluation activity deriving from it. Nevertheless, it is necessary to remember that important progress has been made on the side of project implementation. The recent Decree named "Sbocca cantieri" i.e. "Unblock construction works", has also introduced numerous innovations, especially if we look at the implementation side of public investments: simplification of tender procedures for works up to 200 thousand euros and for municipalities that are not provincial capitals, the possibility of contracting limits for project completion only to the case of interventions involving structural changes, restoration of the design incentives and participation as tender commissioners of PA officials.

What appears to be lightly considered in Italy is, on the contrary, given higher weight in other countries. In 1981, as mentioned in the Pennisi and Maiolo study (2016), President Reagan, with an Executive Order, ordered government agencies and all the departments of the Executive to carry out cost and benefit analysis before issue of any type of regulation and / or approval of a cost intervention. This approach was not denied by the Presidents who followed, in spite of their different economic and political legacies. For example, in 1992, the Clinton Administration's Office of Management and Budget (OMB) issued a circular on the methodology to be used for cost / benefit analysis for all federal programs.

All the Presidents in office and the Congress, that is to say the two major American parties, agree with the approach that public programs and regulations must be undertaken on the basis of the principle of the so called evidence based policy. A principle that was born and developed in international organizations and especially in the "accredited" impact assessment departments dealing with economic development. The use of cost / benefit analysis is considered by the various OMBs fundamentally as a tool to be used in all public investment phases : in the preparation, implementation and monitoring of programs, plans and projects.

In the wide and complex framework of interventions that every good government should adopt for the realization of an adequate policy in favor of public investments, dealing with the link existing between evaluation, implementation and economic growth, is one of the key strategy to address some the obvious problems of coordination failures and poor public choices that persist in our country. Parts of these critical issues could be resolved by undertaking a series of concomitant actions, including vigorous initiatives to simplify and speed up the procedures of ongoing projects, including the following activities:

- a review of the regulatory framework, as well as administrative procedures, aimed at promoting, alongside current bureaucratic responsibilities, an autonomous leadership capacity in the promotion, planning and management of investments by the PA. This should also be pursued by favoring partnerships with the private sector in terms of skills and the acquisition of funding for institutional funds;
- the restructuring and monitoring of financial resources for investments for the efficient management of public capital;

- the enhancement of the technical skills and planning and economic and financial assessment functions of the projects in the Public Administration starting, on the one hand, from a systematic implementation of the cost-benefit analysis, and on the other hand, by the rigorous pursuit of preparatory activities, the contracting of projects as their final design;
- the active and centralized management of the public expenditure database and direct connections with the expenditure terminals for constant monitoring of progress and optimization of spending times for individual operations;
- an effective coordination action between the existing structures, to better finalize the administrative action, also making use of the resources and technical skills on the market;
- a strengthening of the Territorial Cohesion Agency to enforce the presence of competences in the area able to give operational technical support to the implementation of investments. This should also lead to the creation of working groups and / or task forces in the sectors of investments of high social priority (water, land and environmental protection, public buildings and urban regeneration, transport and sustainable mobility).

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