



Citation: S. Maiolo, P.L. Scandizzo (2019) Italy's Reorganization of Public Investment Appraisal: Findings and Perspectives for Large Projects and Cohesion Policy. *Bollettino della Società Geografica Italiana* serie 14, 2 Special Issue: 159-170. doi: 10.13128/bsgi.v2i3.710

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Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

For Italian evaluation purposes: S. Maiolo takes responsibility for sections 2, 3, 4; P.L. Scandizzo for sections 3.1, 5; both Authors for sections 1, 6.

Italy's Reorganization of Public Investment Appraisal: Findings and Perspectives for Large Projects and Cohesion Policy¹

I grandi progetti di investimento pubblici in Italia e la politica di coesione: riforma, criticità e prospettive

STEFANO MAIOLO¹, PASQUALE LUCIO SCANDIZZO²

¹ Agenzia per la Coesione Territoriale, Rome, Italy

² Facoltà di Economia, Università degli Studi di Roma Tor Vergata, Italy

E-mail: scandizzo@uniroma2.it; stefano.maiolo@agenziacoesione.gov.it

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. If from a side, large projects succeed, fail or the impact is reduced compared to expectations in terms of positive externalities on the territory and on the economy in general, on the other hand it becomes very interesting to investigate the ways in which these effects are generated. The introduction of this work analyzes the unrealized picture of the Italian legislation on planning and ex-ante evaluation of public investments, against a worrying decline of this component in order of 4% average year that is being registered in the last decade. The second part is dedicated, in the broad framework of territorial cohesion policies, to the not very positive experience in Italy of the European major projects of the past programming period 2007-2013. In the third part are compared the main studies that have highlighted the success factors and the risk factors of a large public investment project. In the penultimate section are proposed 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 contain the recommendations aimed at simplifying and speeding up the procedures of the interventions still in progress, as well as measures to strengthen the capacity building in order to strengthen the territory of the necessary technical and operational support for the implementation of public investments and cohesion policies.

Keywords: public investment, large projects, Europe, externalities, territorial cohesion.

Riassunto. C'è una percezione comune che i grandi progetti non sono solo difficili da realizzare, ma spesso infruttuosi, non generando i benefici attesi, rispetto invece ai costi effettivamente sostenuti. Se da un lato i grandi progetti hanno successo o falliscono o l'impatto risulta ridotto rispetto alle attese in termini di esternalità positive sul territorio e sull'economia in genere, dall'altro diventa molto interessante indagare

¹ The paper represents 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 member. Any errors are the fault of the authors.

sulle modalità con cui tali effetti si generano. Nell'introduzione del presente lavoro viene analizzato il quadro inattuato della normativa italiana in materia di programmazione e valutazione ex-ante degli investimenti pubblici, a fronte di un preoccupante calo di questa componente del 4% medio anno che si sta registrando nell'ultimo decennio. La seconda parte è dedicata, nell'ampio quadro delle politiche di coesione territoriale, all'esperienza non molto positiva in Italia dei grandi progetti comunitari della passata programmazione 2007-2013. Nella terza parte sono messi a confronto i principali studi che hanno posto in evidenza quasi siano in effetti i fattori di successo e i fattori di rischio di un grande progetto di investimento pubblico. Nella penultima sezione sono proposte le attività necessarie per realizzare un legame tra i livelli di progettazione e quello di attuazione di un'opera e/o di un programma di investimento. Nelle conclusioni sono contenute le raccomandazioni finalizzate a una semplificazione e accelerazione delle procedure degli interventi tuttora in corso, nonché misure di potenziamento della *capacity building* per rafforzare il territorio del necessario supporto tecnico e operativo per l'attuazione degli investimenti pubblici e delle politiche di coesione.

Parole chiave: investimenti pubblici, grandi progetti, Europa, esternalità, coesione territoriale.

1. Introduction

In Italy we have witnessed for years the debate on the role of economic analysis and evaluation of public investments, so much that various currents of thought have been created, in turn with relevant topics of discussion on tools and methods that can be applied. Over time, models and theories have also been formulated, as well as working groups focused, for various reasons, on the activities related to programming, planning and design, but always focusing on optimizing the choices related to the scarcity of resources for public spending.

In this situation of potential and reasonable conflict, which in various ways can emerge in supporting one policy rather than another, it is of course necessary to remedy the situation and the three levels of analysis and decision – programming, planning and design – must find the elements of the whole, under penalty of the progressive deterioration, already taking place in Italy for several years, of choices related to public investments.

Our legislator, through Legislative Decree 228/2011, intervened, obliging all Central administrations to adopt sectorial guidelines and a multi-year planning document (DPP) for public interventions, with the aim of optimizing on the one hand the addresses programming, but also to apply the ex-ante design tools on individual investments, whether they are of smaller size or for

homogeneous and repeatable groups, or “non-marginal” interventions, with the aim of better performing the “social profitability” expenditure public.

The Central administrations play a fundamental role, above all for large-scale works, much more than all the other contracting entities, but nevertheless arousing not a few problems on the times and costs for their realization. For various reasons, even argued in this work, 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 expenditure according to solid principles for its effectiveness and efficiency.

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 (Infrastructures and priority settlements), art. 201 provides for the use of the multi-year planning document, to identify infrastructural interventions and priority works, as a planning and general planning tool. As we will see later, important innovations were subsequently introduced to the same Code, also with the recent Law Decree “Unblock building sites”, on the side of the implementation of investments through the simplification of some tender procedures, while on the programming and planning front, as well as the ex-ante evaluation of the interventions, the picture is always uncertain and undefined.

The link between weakness of evaluative investigations in the project life cycle and infrastructural delay accumulated by Italy, to which this work intends to repropose in a critical way the possible solutions, also finds confirmation in a large part of the literature that for years has been studying the phenomenon in Italy (Loiero, Maiolo 2017; Politecnico di Milano and Ministry of Infrastructures and Transport, 2011) and which represents at the same time a constant promise, as a goal to reach, of each new Government at the time of its establishment.

The analyzed literature gives a convincing comparison of the comparative quality of the ex-ante feasibility assessments of public works in the main European countries. From these works it emerges that 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 the territories are envisaged abroad to guarantee legitimacy, transparency and access rights to the various subjects. These moments not only facilitate the construction of the context 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.

2. The regulatory framework for planning and evaluating public investments in Italy

The Legislative Decree 228/2011 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 has been partially 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 following Prime Ministerial Decree of 3 August 2012. Preparatory 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 Ministerial 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. The Prime Minister's 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:

- of the Ministry concerned;
- of 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:

- is structured by promoting the coherence 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, and it 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, in which some issues related to the possible different origin of public resources used to finance a work, 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, which emerged following meetings aimed at collecting feedback for the implementation of the provisions of the legislation in force can be summarized as follows:

1. the employees do not seem to have the specialist skills necessary to draw up the *Guidelines*, let alone the DPP;
2. there emerges 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 does not have 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 allowing the verification of the various evaluation passages of the capital expenditure in the entire 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, even if they are ordinary, 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, given that 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 Decree².

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 stamped by the Court of Auditors on its

website. In fact, not even this Administration has ever established a DPP on the basis of the same guidelines adopted.

3. The policies of territorial cohesion and the experience of “major projects” in Italy

European cohesion policies represent one of the major world examples of policies aimed at redistributing wealth and stimulating growth. 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).

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 realized in July 2018 a document entitled “L’Impatto della politica di coesione in Europa e in Italia” (The Impact of Cohesion Policy in Europe and in Italy) which collects and summarizes important works carried out in the latter over the years on the subject. 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 can be improved through the redistribution of resources among the regions to which the latter are destined, as a decreasing marginal efficiency of the resources that, beyond a certain threshold, produce limited results is highlighted. It underlines the need to take into consideration the heterogeneity of the specific regional context in which the investment takes place and, above all, the emphasis is 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 of the funds by the institutions. 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 the lesser institutional and bureaucratic difficulties as a result of a different governance structure for European funds.

² 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 DL 12 aprile 2006, n. 163, e successive modificazioni” (“Works not included in the Document or in the annual reports cannot be eligible for financing, except what provided by the article 153, paragraphs 19, 19-bis and 20, of the DL 12 April 2006, n. 163, and subsequent amendments”). 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.

Table 1. Reconnaissance of the European “Major Projects” in the 2007-2013 programming cycle. Source: authors’ elaboration from Loiero, Maiolo 2017.

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 MOBILITÀ**	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 MOBILITÀ” is re-named in “PON INFRASTRUTTURE E RETI” with the new 2014-20 programming cycle.

There are also asymmetries and delays in the process of convergence of Southern Italy also due to public spending on capital in the Mezzogiorno far lower than that of the Center-North.

In this paragraph it is reported, in the light of the synthetic evidence of cohesion policies in the literature studied, the case of ex-ante evaluation of the Major Projects (MP) programmed in the time frame of the 2007-2013 community programming, both from part of the Regions, both by the Central Administrations, holders of a specific Operational Plan, as a broad program of interventions shared in the broader framework of territorial 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 MP and consequent approval of the OP itself;
- notification, activity by the Managing Authority to the European Commission, with which the project documentation is transmitted and the request for co-financing to apply to the ESI Funds;
- decision, approval of the European Commission to promote or not the MP subject to notification.

The picture that emerges on the MPs – at the closing date of the previous seven-year period – programmed at national level and partly presented to the European Commission is that of the 2007-13 programming cycle, but some of them have already been formulated in the previous programming cycle 2000- 2006. The photograph is the one taken in Table 1.

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 interventions³. 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: for many of them the suppression has been prepared for various possible reasons, also following the numerous reprogramming that took place during the work.

The MPs notified are only a share (77%) of those programmed as a whole. As shown in Tab. 1, at the end of the programming period, the MPs approved by the

³ For many MPs withdrawn from economic planning, one of the main reasons was the insufficient planning documentation presented to the EC in the notification phase.

Table 2. Reconnaissance of the MPs approved or in the process of being approved, aggregated by sector (amounts in euros). Source: Loiero, Maiolo 2017.

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

European Commission amount to 60% of those planned and equal to 73.

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 positively. The ROP strategy and the choices of direction that have been gradually implemented (it is recalled 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.

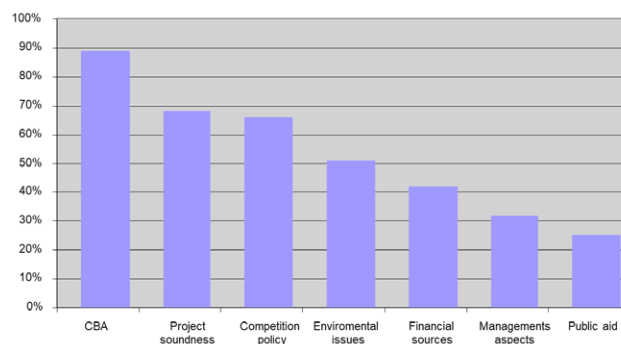
The data in question were also re-aggregated by classifying the MPs in 9 project typologies, articulated both on a regional (POR) and a national (PON) basis. The clear predominance of railway interventions is highlighted, in terms of both the number of projects and the absorption of resources: on a national 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.

What emerge from the “case for 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 related to the confirmation by the Commission of the financial contribution to the Great Project presented (the so-called “Decision” phase).

In order to broaden the evaluative view on what really happens in this preliminary cycle, the observations that the EC carries out on each MP in the two months it has available to approve it have been analyzed, except that – in fact – there are no elements that do not allow the transition to the final decision. The observations are grouped by topic type: Cost-Benefit Analysis, Project Planning, State Aid, Financial Analysis, and so on.

As shown in Fig. 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 analyzes, 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 coverage plan, to the management system of the interventions carried out, to the presence of Aid of State.

As for the previous programming cycles, a new guide was also prepared by the DG Regio for the formulation of the major projects, for the current 2014-20 year (EC 2014). There are two main innovations: the techni-

**Figure 1.** Frequency of European Commission observations on MPs for different types. Source: Loiero, Maiolo 2017.

cal-methodological aspects and governance as useful 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.

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.

3.1 The role of evaluation and cost-benefit analysis in conditions of uncertainty

The cost-benefit analysis is a rather complex methodology of economic evaluation of the projects, but necessary for an efficient public investment policy. Regardless of the outcome of the individual applications, which in itself lends itself to the evaluation of large, but also small, it is considered that the focus on the need for in-depth quantitative assessments is a positive element of the ongoing analyzes on large-very large projects subject to the current and controversial debates, especially if we consider the TAV Turin-Lyon and the project of the Terzo Valico di Giovi.

It 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 (e. g. 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.

In order to provide policy makers with adequate information, the problem of cost-benefit analysis must also be defined according to the moment in which the assessment takes place. For a new work of high dimensions, which inspired part of this work, one of the tools widely used in literature (Perali, Scandizzo 2018; Scandizzo, Maiolo 2005a) is that of the "method of effects", where through a model of general economic equilibrium the impact generated by the project on the main macro-economic variables is estimated: GDP, consumption, employment, net production following inter-exchanges between the actors and economic sectors directly and indirectly involved.

For the works in progress, but also for those from scratch, the evaluation should be approached using the so-called real options technique (Scandizzo, Maiolo 2005b), and evaluating the so-called exit option if the project itself is to be questioned from a very clear overcoming of the overall costs on future benefits. In other words, for those who have undertaken the project, during construction, the option, or rather the option, but not the obligation, to suspend, cancel or modify the project at any time during its implementation.

Evaluating these options (called real options in analogy, but also to distinguish them from financial ones), according to the so-called extended net present value method, allows to take into account the costs associated with definitive or temporary abandonment or redesigning, in addition to cost savings and lower benefits, which would be realized by canceling, suspending or redesigning the project.

If one or more of these real options has a positive value, the evaluator may recommend that the work be suspended, canceled or modified, depending on which option has the highest value. Since the evaluation of real options takes place taking into account the opportunities and risks associated with the project, the conditions of dynamic uncertainty of the intervention (ie the future evolution of the boundary economic conditions), receive the necessary attention, which is not sufficiently present in an analysis carried out with the traditional method.

4. 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 achieve, but often unsuccessful, not generating the expected benefits, compared to the costs actually incurred. On the other hand, this category of interventions belongs to the case that unites the characteristics of the interventions described in the introduction, since in considering the volumes of investment in public works, the relative frequency concentrates the greatest resources in this portion of the largest works.

While large projects are successful or fail or the impact is reduced compared to expectations in terms of positive externalities on the territory and on the economy in general, on the other it becomes very interesting to investigate the ways in which these effects are generated. It is also important to investigate the series of related causes, always bearing in mind that, at least in principle, there seems to be no reason why all useful projects with clear and achievable objectives, regardless of their

size, cannot be a fundamental vehicle of socio-economic development in the territory where they are located.

However, it is important to remember that economic theory predicts that different economies of scale, positive and negative, can be associated with the size of economic activities. In cases where the benefits (costs) tend to decrease (increase) with the increase in the size of the economic activities put in place (decreasing returns to scale), we must expect lower average results in larger projects than in smaller ones. Conversely, if there are positive economies of scale, such as for example in large communication network projects, the opposite can be expected. Literature agrees that there is a paradox common to large investment projects:

- The actual cost rises from 50 percent to 100 percent, and in some cases there are more than twice the costs initially estimated.
- Prevision demand side forecasts are overestimated by 20 percent to 70 percent compared to actual user usage.
- The environmental impact sustained following the implementation of the intervention is significantly different from that expected, it is also the conduct of an adequate performance audit service that is often feasible only with considerable difficulties.
- The models of inter-territorial 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 36 project variables to define four possible success factors for large public works projects in India: sensitivity and respect for rules and regulations; ex ante planning of the project and clear definition of the objectives; effective public debate between project participants; efficient monitoring and control system also entrusted to the outside.

A similar study (Ika et al. 2012) was conducted on a set of major projects through another survey, related to the success of projects carried out by the World Bank, with particular reference to the relationship between the critical factors of success and failure of the project. The analysis shows five factors (monitoring, coordination, planning, training and institutional environment) positively correlated to the success of the project.

Project control and management are obviously decisive factors in the success of the project in an operation-

al perspective, but the authors believe that attention to the initial phases is even greater and more important: a clear vision of the objectives and a strong political will; a structure responsible for the formulation of independent and stable design over time; a charismatic project manager with high professional skills; a solid financial approach from the initial phase of the project and based on a realistic business model; appropriate procedures for legal consents with possible audit options; a broad and completely representative stakeholder of the various positions, with an open communication management model; a rigorous process of managing any changes and project reviews.

If the factors mentioned above lead to the success of a major project, Pinto and Kharbanda (1996) identify twelve factors that, on the contrary, can lead to failure: ignoring the context of the project and its characteristics, including the behavior of the interested parties; push a new technology to market too quickly; not planning the “possible among the possible problems”, for example through the analysis “and if ...”; when problems occur, focus on the most visible problem ignoring everything else especially when you are in fact more trouble; not encourage projects based on new ideas because of their uncertainty, with the risk that inertia could kill innovation; not carry out ex ante feasibility studies; 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; do not conduct post-failure reviews, losing the opportunity to learn and understand the main reasons for the failure; allow

bureaucracy and internal governance to be more important than project success; not worrying about the existence of project trade-offs; let the political influence modify the decision-making process; a non-charismatic and unqualified project manager was chosen.

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 (Tab. 3) reports a reasoned survey on the analysis of risk and success factors to which various authors have identified the main causes.

5. 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

Table 3. Analysis of risk and success factors for major projects. Source: authors' elaboration on various surveys.

success factors	risk factors
• 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 et al. 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 et al. 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, King 1983).	• 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 debat; 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).

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 increases 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 competence originates in 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”.

Which teaching 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.

6. 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, given 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 provision contained in paragraph 3 of article 5 of the standard examined in this work.

If, therefore, remains a structural weakness in terms of the ex-ante phase of public spending, in relation to the programming and planning phase, as well as the transversal ex-ante evaluation activity deriving from it, it is necessary to remember the important works started from the introduction of the new Procurement Code,

rather on the side of implementation than on the ex-ante selection and evaluation phase.

The recent Decree Law cd. "Sblocca cantieri", 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 with the final project only in the case of interventions involving structural changes, restoration of the design incentives and participation as tender commissioners with respect to PA personnel specifically authorized.

What appears to be lightly interpreted in Italy is not, on the contrary, made in other countries. In 1981, as mentioned in the Pennisi and Maiolo volume (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 pursued it. 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 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 the cost / benefit analysis is considered by the various OMBs fundamentally as a tool used ex-ante, in the preparation 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, this work, in dealing with the link existing between evaluation, implementation and economic growth, has put in place the obvious problems that persist in our country. Parts of these critical issues could be resolved in a series of concomitant actions, including vigorous initiatives to simplify and speed up the procedures of ongoing projects, and which consider 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, favoring partnerships with the private sector

also 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, accompanied by the preparatory activities, the contracting of projects as the final design and executive;
- the active and centralized management of the public expenditure database and direct connections with the expense 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.

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