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Financials and Contractual Guidelines to Support Public-Private Partnership Proposals in the Healthcare Sector

Politecnico di Torino

Supervisor:

Prof. Alberto De Marco

Candidate:

Lorenzo Pignatta

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ABSTRACT

Over the past decade, the phenomenon of collaborations between public and private entities has flourished in broad fields of the public realm. Public-private partnership (PPP) has attracted increasing interest from public authorities because of the many benefits that can be derived from the implementation of this type of arrangements.

Analyses conducted by the Italian Presidency of the Council of Ministers - Department for the Planning and Coordination of Economic Policy (DIPE), however, show that the PPP market in Italy does not seem to be fully developed yet, especially in comparison with other markets in major European countries. This can be traced back to a number of challenges. Yet, as reported in the study conducted by DIPE, one of the main disincentives to private investment in Italy lies in the uncertainty and excessive length of the authorization and administrative processes (DIPE, 2022).

The challenges and issues set forth are clearly reversed and reflected at the regional level, where local administrative bodies and private entrepreneurs are exposed at the forefront in dealing with the complex administrative procedures involving PPPs.

For these reasons the research work, by going to analyse a series of case studies submitted to the Regione Piemonte in the Healthcare field (as per Art.183 paragraph 15 of the Legislative Decree No. 50 “Codice dei contratti pubblici” April 18, 2016), aims at developing an initial set of specific guidelines that can enhance and speed up the procurement process. The guidelines address different critical aspects of the awarding procedure (PSC, Risk Matrix, financials, etc.) and aims at providing a framework which is able to support both the private and the public party in the submission of new privately-led PPP proposals.

Furthermore, by means of an extensive literature review, this research aims also at expanding the general knowledge on PPPs.

The resulting model can be an important step toward the future implementation of a set of more specific guidelines and tools that can streamline the procurement process, ultimately leading to a potential greater development of the PPP market in Italy.

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INTRODUCTION

It is widely recognized that the phenomenon of public-private partnerships (PPPs) is experiencing a growing appeal among public and private entities at the international level. PPPs has attracted increasing interest because of the many benefits and opportunities that can be derived from the implementation of this kind of arrangements.

Considering the Italian context, however - as depicted by the analyses conducted by the Italian Presidency of the Council of Ministers "Department for the Planning and Coordination of Economic Policy" (DIPE) - the PPP market does not seem to be fully fledged yet, especially in comparison with other markets in major European countries. While this can be traced back to a number of challenges, the study conducted by DIPE identifies the excessive length of authorization and administrative processes as one of the main obstacles to private investment in Italy (DIPE,2022).

The challenges and issues set forth are clearly reversed and reflected at the regional level, where local administrative bodies and private entrepreneurs are exposed at the forefront in dealing with the complex administrative procedures involving PPPs.

In particular, this research paper stems from a need faced by IRES, an instrumental body of the Regione Piemonte, that, while conducting its consultancy activity for the Regional Institution, has noticed a strong heterogeneity in the content of Public-Private Partnerships (PPP) proposals on private initiative submitted to the Region and developed through a Project Finance scheme, with regard to the Healthcare sector.

The heterogeneity of proposals not only makes the IRES assessment process more challenging and demanding, but ends up in slowing down the entire project procurement procedure.

The research objectives are, therefore, on the one hand to develop an initial set of specific guidelines that can speed up the procurement process, providing a framework which is able to support both the private and the public party in the submission of new privately-led PPP proposals to Regione Piemonte in the Heathcare sector and, on the other hand, to expand the general knowledge on PPPs in order to facilitate the recourse by private entrepreneurs to such projects.

Chapter one is dedicated to an extensive literature review covering all relevant aspects linked to the PPP topic. In this chapter, an effort is made to give a clear and comprehensive overview of such initiatives, ranging from the definition of PPP to the financials, risk management and PSC topics. This is in line with the Thesis goal of expanding the general knowledge on PPPs.

In chapter two is presented an overview of the PPP market in Europe.

Chapter three, instead, contain a description of the research methodology: six different case studies will be analysed in order to develop an accurate set of guidelines to enhance and speed up the procurement process of PPPs on private initiative in the Healthcare sector.

The case studies in-depth presentation and analysis is included in chapter four, while chapter five is dedicated to the proposal of a guideline which aims to address the criticalities that emerged from the analysis and which have been identified in the previous chapter. Parallel to the development of the guidelines, it has also been arranged a dedicated excel template in order to support the public party in the evaluation of PPP proposals, which can be found as an annex of the research work.

Finally, chapter six is dedicated to closing remarks and conclusions of the research.

1. LITERATURE REVIEW

1.1 Introducing PPP

1.1.1 GENERAL DEFINITION

It is widely recognized that, notwithstanding the academic effort at research level, there is no single, internationally accepted definition of Public-Private Partnerships (PPPs).

The Organisation for Economic Co-operation and Development (OECD) defines Public-Private Partnerships as "long term contractual arrangements between the government and a private partner whereby the latter delivers and funds public services using a capital asset, sharing the associated risks" (OECD, 2018). According to the Public-Private Infrastructure Advisory Facility (PPIAF), instead, PPPs can be defined as "a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility and remuneration is linked to performance" (PPIAF, 2022).

These different definitions allow to clarify the common points and highlight the various facets of this peculiar form of cooperation. Moreover, as shown in the Green Paper on Public-Private Partnerships and Community law on public contracts and concessions, the European Commission identifies four key aspects that are common to each kind of PPPs project.

> The following elements normally characterise PPPs:
>
> - The relatively long duration of the relationship, involving cooperation between the public partner and the private partner on different aspects of a planned project.
> - The method of funding the project, which is granted fully or partially by the private party, and may be the result of complex arrangements between the various players.
> - The important role of the private economic operator, who participates at different stages in the project (design, completion, implementation, funding). The public partner concentrates mainly on defining the objectives to be attained in terms of public interest, quality of services provided and pricing policy, and it takes responsibility for monitoring compliance with these objectives
> - The distribution of risk between the public partner and the private partner, to whom the risk generally borne by the public sector are transferred. However, a PPP does not necessarily mean that the private partner assumes all the risks, or even the major share of the risks linked to the project. The precise distribution of the risks is determined case by case, according to the respective ability of the parties to assess, control and cope with risk.
>
> (Commission of the European Communities, 2004)

All these broad definitions shows that PPPs can be designed to achieve a wide array of objectives in various sectors, such as transport, energy and healthcare, and can be structured under different approaches (OECD, 2018).

1.1.2 HISTORICAL CONTEXT

The use of private resources and competencies to foster public infrastructure is not a brand-new methodology, but rather constitutes a revival of an old tradition.

In fact, several instances of Public-Private collaboration can already be found in ancient history. Two thousand years ago, the Roman Empire developed its postal service ("Cursus Publicus"), to accompany its vast expansion across Europe. The infrastructure required were mainly mansions ("Mansiones") and service stations ("Mutationes") that played a major role in the establishment of a fast and efficient communication system. The construction and management of this facilities were awarded by municipalities under competitive bidding, and they were usually managed by a private partner for a five-year period, sometimes including maintenance of associated highway. This kind of collaboration framework was not abandoned, and can be found in several circumstances across different regions and historical periods.

Moving to more recent times, the first industrial revolution brought rapid urbanization and expansion of public networks in transport (railways, tramways, metropolitan), water supply and sewerage and energy. This expansion, achieved largely with the intervention of private parties, marked the golden age of concessions in Europe. Especially the construction of railways was achieved mainly via concessions across all European countries. The outbreak of World War I and II and the consequent economic disruption hugely increased the role played by the State. As a result of economic turmoil and contractual standby during war years, concessions in many fields were cancelled and rarely re-established. Several state-owned companies were created to contrast the financial exposure of traditional long-term contracts. Thus, after World War I, new public infrastructure was mainly designed, constructed, and financed from public funds (PPIAF, 2009).

A further trend reversal was brought in Europe in 1992 when the Private Financing Initiative (PFI) was proposed in the United Kingdom (Gatti, 2008). This was a programme proposing the implementation of a typology of Public-Private cooperation (despite the absence of a general regulatory provision of PPPs) in the field of infrastructural projects, to pursue general interest satisfaction. This political move paved the way for the development of several other PPPs programmes across different European countries. Other countries with significant PPP programs

include Australia (and in particular the state of Victoria) and Ireland, but many continental Western European countries developed a number of PPP projects as well.

The increase in popularity of PPPs lead the European Union to open a debate and a research on such phenomena in 1999, which ultimately lead to the publishing of the abovementioned Green Paper in 2004. The European Commission itself was fully aware that it was not yet possible to bring all forms of public-private partnership within the scope of Community law, making clear that the adoption of the Green Paper was simply a mean to formally recognize the PPPs phenomena and by which to start a deeper consultation in order to ascertain whether there was a real need for supranational action, and then possibly what was the most appropriate tool to do it. The aim of the Green Paper was to analyse the extent to which the Community framework was suited to the specific characteristics of PPPs, outlining avenues for possible future Community interventions.

A few years later, the outbreak of the 2007-2008 financial crisis lead the European Union to consider PPPs as an attractive instrument to foster employment and to rebalance public debt. However, these partnerships were expanding in the absence of a European frame of reference, which inevitably led to fears and concerns about the protection of competition within the European Single Market.

The turning point came with the EU Directive 2014/23. With this document the Legislator developed a body of rules which regulate concessions at European level. The aim of EU was not to establish an overarching regulation covering all aspects of PPPs. Instead, the aim was to regulate some of the major institutions that have traditionally been linked to the partnership, such as concessions. The directive lists some rules and goals and establish a general legal framework to follow. However, being a directive, it is up to the individual member states to define, by means of national provisions, how these general objectives are to be achieved. Therefore, a proper formal analysis on PPPs will be conducted in the following chapters taking into account the Italian normative context, which in any case has been developed in compliance with the EU Directive 2014/23 sharing the main points and definitions.

1.1.3 PPPs IN THE ITALIAN REGULATORY FRAMEWORK

In view of the adoption, among others, of the EU Directive 2014/23, the Italian Government has developed a proper legal system, named “Codice dei Contratti Pubblici”, issued under Legislative Decree no.163 of 12 April 2016. The Code governs the subject of public contracts for procurement, supplies (goods) and services, and in general the subject of public works. It is a comprehensive text capable of regulating the relations between the public administration and the private companies

responsible for carrying out public works. The matter of PPPs is tackled by the code of law in articles from 179 to 191, which provide a specific framework for the subject.

1.1.4 PPP DEFINITION

PPP contract is defined in Art. 3 paragraph 1, lett. eee) of the Code as:

<< Un contratto a titolo oneroso, stipulato per iscritto, con il quale una o più stazioni appaltanti conferiscono a uno o più operatori economici per un periodo determinato in funzione della durata dell'ammortamento dell'investimento o delle modalità di finanziamento fissate, un complesso di attività consistenti nella realizzazione, trasformazione, manutenzione e gestione operativa di un'opera in cambio della sua disponibilità, o del suo sfruttamento economico, o della fornitura di un servizio connessa all'utilizzo dell'opera stessa, con assunzione di rischio da parte dell'operatore secondo modalità individuate nel contratto. >> (Art. 3 paragraph 1, lett. eee, Codice dei Contratti Pubblici)

Based on all previous considerations, a project might be defined as a PPP if it meets the following features, showed in the table:

1. It is a **long-term** contract between a public contracting authority and a private entity for the delivery of a **public service**
2. Allocation of specified **risks** (and functions) to the private entity (typical candidates are design, build, operate, maintain, finance)
3. The fully or partially involvement of **private financing** (often involving project finance mechanisms)
4. **Performance-based payments**

Table 1: *Properties of a PPP agreement*

1.2 Key Elements of PPPs

The following subsections will discuss some peculiarities that characterize PPP contracts. The specific reference will be the Italian Legislation but knowing that, having to comply with the EU directive 2014/23, all major points analysed are internationally established.

1.2.1 PPP VS TRADITIONAL PROCUREMENT

Having thoroughly defined PPP contracts, it is apparent how Traditional Procurement agreements ("Appalto") can't be included under this generic, "umbrella" term. In fact, Traditional Procurement is the instrument through which the administration acquires certain services in exchange for the payment of a price, in which the public-private collaborative aspect is practically absent, and no significant risk transferral happens. In addition, some elements that the Green Paper has identified as characterizing PPPs are missing in Traditional Procurement contracts. These includes, besides the risk transferral, also the funding by the private party and the long duration of the relationship. These characteristics, on the other hand, constitute the essence of other forms of public-private cooperation: the following section will list the most important PPPs contract types.

1.2.2 PPPS CONTRACT TYPES

Typically, PPP projects present a contractual term between 20 and 30 years. However, there is no fixed duration, and this can vary based on the type of project and even on financing considerations. As reported in the World Bank PPP Reference Guide, << The term should always be long enough for the private party to have an incentive to integrate service delivery costs considerations (including maintenance) into the design phase of the project >> (World Bank, 2022).

There are many variants of PPPs. Following World Bank PPP Reference Guide, in this discussion PPPs will be categorized according on three different axis or parameters:

1. The type of assets involved.
2. The functions for which the private party is responsible.
3. The payment mechanism.

Greenfield projects are those projects that involves new assets starting from scratch. Instead, PPPs used to transfer responsibility for upgrading and managing existing assets to a private party are called *Brownfield* projects.

For what concerns the second variable, several functions can be attributable to the private party. The most recurring ones are:

- **D**esign. This involves all the process from initial conception and project requirements to detailed design and project specifications.
- **B**uild. When PPPs are used for new infrastructure assets, they typically require the private party to construct the asset and install all equipment. Where PPPs involve existing assets, the private party may be responsible for rehabilitating or extending the asset (World Bank, 2022).
- **F**inance. As reported in the Green Paper, typically the private party is responsible for finance all or part of the capital expenditure (Capex) necessary to build or rehabilitate the asset involved.
- **M**aintain. This function assign responsibility to the private entity for maintaining an infrastructure asset to a specified standard over the life of the contract (World Bank, 2022).
- **O**perate. This involves providing services to users, but the specific responsibilities can vary a lot depending on the nature of underlying asset.

Different kinds of PPPs are usually indicated by specific acronyms, which are based on the different functions allocated to the private party.

1.2.2.1 Build-Operate-Transfer (BOT)

BOT ("Concessione di Costruzione e Gestione") projects are normally large-scale, greenfield infrastructure projects that would otherwise be financed, built and operated solely by the government (Investopedia, 2022). Under such a contract, the Public Authority grants a concession to have the asset built, financed and operated by a private entity which seeks to earn a profit over the contractual period. After the contractual term has expired, the ownership of the asset is returned back to the Public party that originally granted the concession. The term BOOT is often used as a synonym of BOT. Several variants of this model exist. The most common is the BTO arrangement, in which the ownership of the asset is transferred immediately after construction is complete.

In either of the above listed arrangements, "Rehabilitate" may take the place of "Build" whenever a Brownfield project is involved (ROT). In such cases, the private party is responsible for rehabilitating, upgrading, or extending existing assets, rather than building it from scratch.

1.2.2.2 Design-Build-Finance-Operate (DBFO)

The private entity under such contract is responsible for design, construct, finance and operate a capital project. In consideration for performing its obligations under the agreement, the private party may be remunerated by the government agency or from fees collected directly from the project's end users. In any case, the public entity retains ownership of the project. Usually the maintain function is implied as part of operations (DBFOM).

1.2.2.3 Private Finance Initiative (PFI)

As stated previously, UK was one of the first countries to introduce PPP concept under the term PFI in 1992. Today, this term is generally used to describe forms of PPPs where the design, build, finance and operate functions are transferred to the private party. It can be therefore considered very close to the DBFO schemes, sometimes used interchangeably.

In particular, another form of PPPs which can be listed in this category is the Design-Build-Finance-Maintain (DBFM). The difference from DBFO lies in post-project completion activities. With DBFM, maintenance refers to actions taken to keep the asset in running order, whereas with DBFO, operations refer to actions taken to achieve business objectives. In this sense, maintenance can be considered a subset of operations (Designing Buildings, 2021). The DBFM contractor will be paid for proving the required services in terms of Availability, intended as the burden assumed at his own risk to ensure to the administration the constant usability of the infrastructure, in compliance with the parameters of functionality listed in the contract. Therefore, in DBFM context, the contractor first develops the project and will only get paid by the actual availability of it. This means that the pre-investment should be recovered during the maintenance phase by meeting availability requirements (Wijnker, 2019). DBFM can be compared to the "contratto di disponibilità" in the Italian Legislation.

1.2.2.4 Build-Lease-Transfer (BLT)

BLT is a contractual arrangement where a private party (Concessionaire) is entrusted to design, finance and construct an infrastructure. Upon its completion, the facility is delivered to the government agency or local government unit concerned on a lease arrangement for a predetermined period (lease or concession period). At the end of this period, the private party transfer ownership to the public entity for a price that was previously agreed. A variant of this contractual arrangement is the Build-Lease-Maintain-Transfer (BLMT), where the private party is also responsible for maintenance (but not of the operation) during the concession (or lease) period. Both of these forms of PPPs may be associated to the "contratto di locazione finanziaria di opera pubbliche" in the Italian Legislation.

1.2.2.5 Operations and Maintenance (O&M)

This is another case of brownfield PPPs, as they involve the private party for the operations and maintenance of an existing asset. It is important to state that these arrangements come under the definition of PPP just when these are performance-based, long-term, and involve significant private investment (World Bank, 2022). Instead, when the initial investment (Capex) is borne by the government, which retains ownership of the asset simply transferring O&M to the private party in a 3-5 years duration contract, the arrangement is called "Management Contract", as it doesn't strictly meets the PPP requirements.

The payment scheme is the third and last variable. Regardless of the delivery system chosen, the private party can be paid for the services offered by collecting fees from final users, by government, or by a combination of the two. The common characteristic in any PPP payment scheme is that the payment must be contingent on performance. Depending on the kind of assets involved and on the delivery system chosen, three possible payment configurations can be agreed:

- In *user-pays* PPPs, the private party is responsible for providing a service directly to users and is able to charge a price for it, generating revenues that will remunerate the investment made. A typical example of assets involved in user-pays PPPs are toll roads. These kind of revenue-generating assets are usually referred to as "Opere Calde" in the Italian Legislation.
- Under *government-pay* PPPs, the government represent the sole source of revenues for the private entity (World Bank, 2022). The payments involved can vary depending on the availability of the asset or on some quality standard defined in the contract. Schools are the most prominent example of assets that are involved in this payment scheme ("Opere Fredde").
- Hybrid solutions do exist, in which the underlying asset isn't able to generate sufficient cash flows or price is capped by the government due to competitive issues ("Opere Tiepide"). Museums or Hospitals can be fair candidates for a hybrid payment scheme.

1.2.3 PARTIES INVOLVED IN A PPP

Besides the possibility to record the investment off balance sheet, exploiting the access to private sector finance, PPPs could lead to several other advantages for the government. The most apparent benefit is the opportunity to leverage private sector skills and having access to innovative solutions. The greater competence and experience in dealing with peculiar situations is usually the reason for a risk transferral to the private party. Having the risk transferred to the party which is most able to

handle it will result in a greater economic value delivered by the project. Secondly, PPPs entail an enlargement of focus compared to the traditional procurement. The shift from the simple provision of an asset to the provision of additional services such as maintenance and operations, incentivise the private party to consider all the asset lifecycle, providing solutions that optimise the full lifecycle costs.

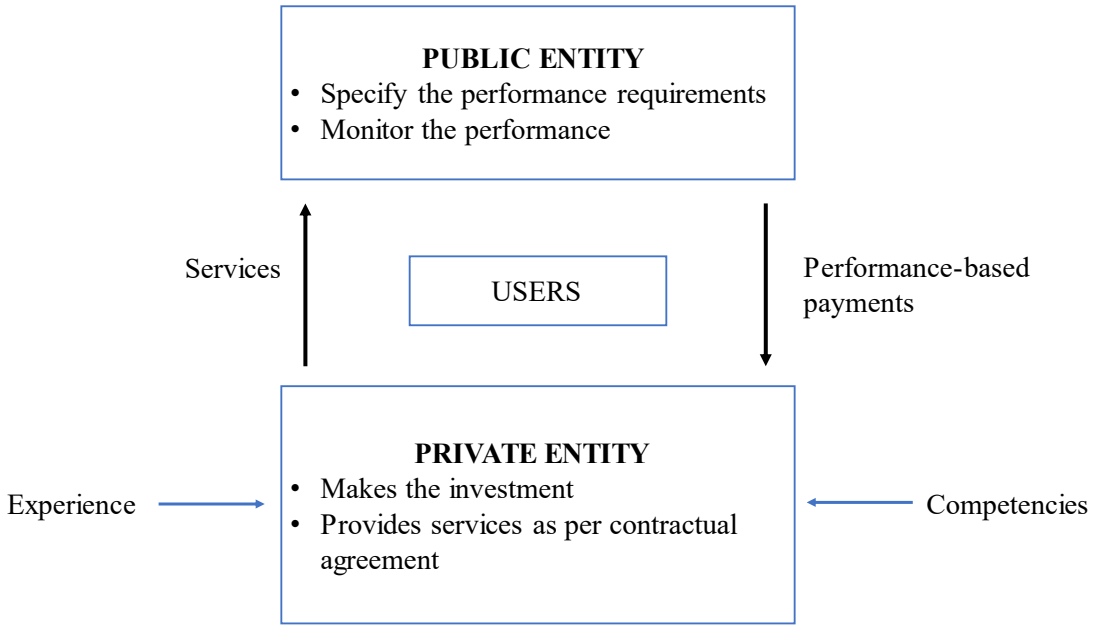

Figure 1: *Public - Private interaction.*

Source: *De Marco, 2022*

As stated in the Italian Legislation (Art. 184, paragraph 1, Codice dei Contratti Pubblici), the private party has the possibility to create a project company (SPV). This usually happens also in the international field, as remarked by World Bank:

<< For the provision of these services, the private party typically creates a PPP company, a Special Purpose Vehicle (SPV). A dedicated SPV allows for the segregation of all assets and liabilities linked to the private provision of services >> (World Bank, 2022).

In the European Green Paper there was already a distinction between "pure contractual" and "institutional" PPPs. According to the definition provided, the former are based solely on contractual links, while the latter lead to the creation of an ad hoc entity held jointly by the private and the public

parties. The peculiarity of this latter types of contracts is the participation of the government authority in the equity of the project company. This paper, however, focuses the analysis on contractual PPPs.

The creation of an SPV is one of the key elements of the Project Financing mechanisms, which will be discussed in the following sections.

As represented in the figure below (Contractual PPPs), the government's primary contractual relationship is with the project company (World Bank, 2022). Sometimes, however, an additional contractual agreement is incurred with lenders. This typically is limited to provisions in favour of the lender such as senior debt repayment guarantees. The initial SPV equity investors, who develop the PPP proposal, are generally called project shareholders. Typical equity investors may be project developers, engineering or construction companies, infrastructure management companies, and private equity funds (World Bank, 2022). Commercial banks, multilateral and bilateral development banks and finance institutions, and institutional investors such as pension funds and insurance companies are instead entities that typically assume the role of lenders to PPP projects. To deliver the services required by the project, the SPV can enter into contractual agreements with other firms (EPC contracts, or O&M), which are typically affiliated with the equity investors.

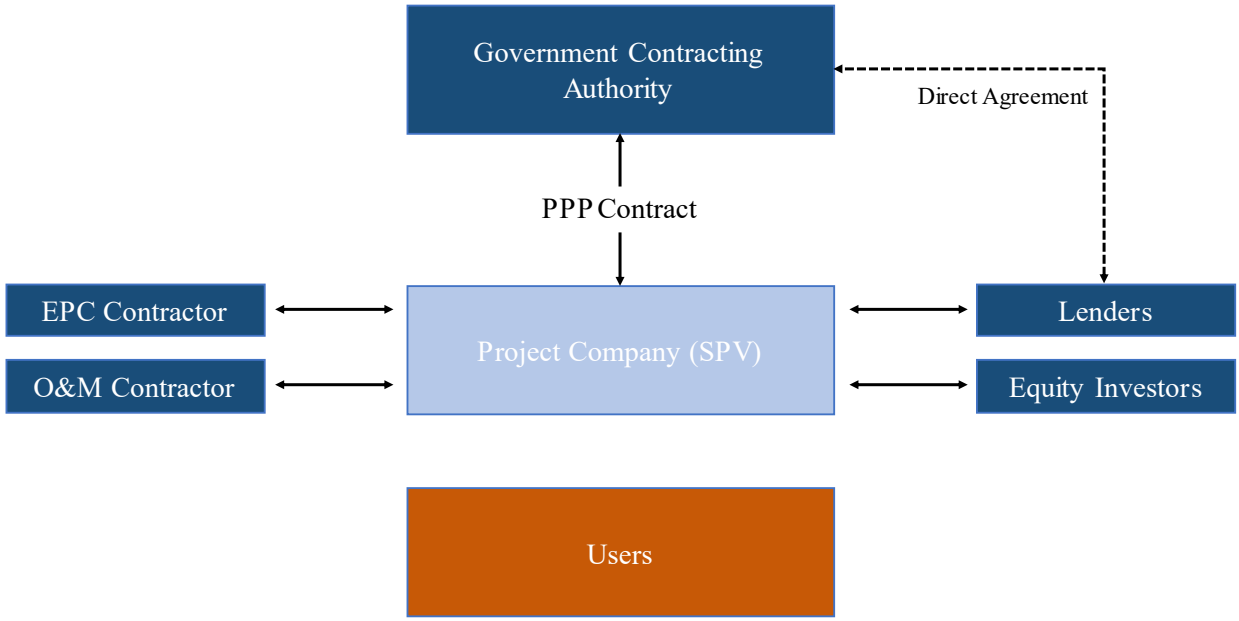

Figure 2: *SPV Contractual relationships.*

Source: *World Bank, 2022*

1.2.4 PPP PROCESS

PPP schemes are by definition more complex than traditional public procurement. They require detailed preparation and planning of projects and an appropriate management of the procurement phase to encourage competition between private parties. They also require careful preparation of the PPP contract, in order to define a proper risks allocation and finding an acceptable balance between risks and commercial returns. These characteristics require the public sector to have skills that are not usually needed in traditional procurement. The life of a PPP project on public initiative can be broken down into four main phases (EBEC, 2021).

1.Project Identification	Project selection	• Output definition (must be in line with goals of the "Programma Triennale") • Selection (Preliminary Assessment or "Studio di Fattibilità")
	Evaluation of the PPP option	• Affordability • Risk allocation • Bankability • PSC and VfM analysis
2.Project Preparation	Organization	• Establishment of the Project Team • Governance (RUP) • Appointment of consultants • Timetable definition and planning
	Detailed Preparation	• Developing detailed PPP contractual structure and terms • Selection of the appropriate public procurement procedure and evaluation criteria
3.Procurement	Procurement Procedure	• Publication • Conducting the procurement process in line with the procedure that has been chosen in Phase II (mode of interaction with bidders) • Offers evaluation and selection of a preferred bidder
	PPP contract	• Negotiation of details and small contractual changes

		• Signing of all the PPP related agreements ("Financial close")
4.Implementation	Managing the contract	• Monitoring performance • Contractual changes management and disputes resolution • Managing the termination/expiry of the contract

Table 2: *PPP Process.*

Source: *EBEC guide, 2021*

In Italy, "Programma Triennale" is a planning tool with which the government authority identifies the major infrastructural needs and objectives to be achieved in a three-years planning horizon. The "Programma Triennale" is updated each year through the "Elenco Annuale" document, and has to be developed in line with all the economic and financial constraints to which the public administration is subject.

Programming is the decision-making moment in which the public entity sets its objectives and how they will be achieved, trying to respect the criteria of maximum efficiency and cost-effectiveness. These documents are expected to specify which public works may be financed wholly or partly by private capital. For the initiation of PPP operations, a sufficient condition for the inclusion of the public work in the "Elenco Annuale" is the approval of a feasibility study and/or preliminary draft. After having passed a preliminary feasibility study, and provided its goal are in line with those implied by the programme, a PPP project can be therefore inserted into the "Programma Triennale".

Once a preferred project solution and its potential delivery using a PPP approach has been identified in Phase I, the public entity should start detailing the project in order to make it ready for procurement. However, as reported by EBEC, << since the choice of a project solution and delivery approach are, at this point, only based on preliminary assessments, it is important that the contracting authority develop the project in more detail, in order to confirm or potentially revisit the assessments made in Phase I. Therefore, Phase II should be advanced in a gradual and iterative way, as many of the activities set out below are interdependent (EBEC, 2021). >>

The appointment of PPPs consultants is another crucial element to ensure a successful project. This step has been listed in phase 2, but it should be noticed that the role played by consultant covers all the project lifecycle, starting from the feasibility study. All the following case studies in this academic paper are presented taking into consideration the consultant's point of view.

The procurement phase is the step which lead to the signing of all the contractual agreements. This phase can be managed in several ways and according to different award methods (Competitive bid, CAP, negotiation), depending on the specific kind of project analysed.

After procurement, one important step is the monitoring phase, which consist in controlling that the performance is in line with contractual standards, and in managing any possible dispute arising. Managing the termination of the contract is really the last step, and this usually occur after a substantial concession period has passed (20-30 years).

All the process has been described in general terms. For a more detailed description, it is necessary to refer to the specific legislative framework of the country considered. The Italian legislation regulates the awarding process for PPPs in art.181 "Codice dei Contratti Pubblici". This basically defines the following points:

1. The choice of economic operator shall be made by public evidence procedures.
2. Contracts are awarded on the basis of a final project, a draft contract and a business plan (Developed by the Public authority), which clearly establish the allocation of risks between the contracting authority and the economic operator. This is the main difference with respect to the Project Financing mechanism (Art. 183), in which instead the private party has a more involved and active role in defining the final project and the draft of the contract.
3. The awarding decision shall be preceded by an appropriate appraisal with regard to the analysis of supply and demand, the economic, financial and economic-social sustainability of the operation, and the nature and intensity of the various risks involved in the partnership operation. This imply the use of evaluation techniques such as comparison tools to verify the usefulness of the use of public-private partnerships as an alternative to direct implementation through traditional procurement procedures (e.g. PSC, VfM).
4. The contracting authority shall exercise control over the activity of the economic operator through the implementation of monitoring systems, in accordance with procedures defined by guidelines adopted by ANAC, checking that the private economic operator retains the risks transferred to him.

This is the "standard" process as described in the Italian legislative framework. However, exceptions to this process do exist. The most apparent one is the Project Finance, which will be discussed in the following chapter.

1.3 Economic and financial viability of a PPP project: Project Financing mechanisms

This chapter focus on the analysis of Project Finance, an important financial tool which is often used in PPP projects. In fact, as stated in Art. 182 "Codice dei Contratti Pubblici", PPPs contracts may be financed using appropriate instruments such as, among others, project finance.

1.3.1 PF GENERAL DEFINITON

A sponsor can choose to finance a new project using two options (Gatti, 2008):

1. The new initiative is financed on balance sheet as a project within a company, using traditional corporate debt for financing (corporate financing). (Engel, 2014)
2. The new project is considered as a stand-alone project, incorporated into a newly created, legally-independent economic entity (the project company or SPV), and financed off balance sheet (project financing).

This latter path is usually referred to as Project Finance (PF), which can be addressed more precisely by the following definition:

<< Project financing may be defined as the raising of funds on a limited-recourse or nonrecourse basis to finance an economically separable capital investment project in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide a return on their equity invested in the project (Finnerty, 2007). >>

Project Finance can be defined also as the structured financing of a specific, separated economic entity (SPV) created by sponsors and for which the lender considers cash flows as being the primary source of loan reimbursement, whereas assets represent only collateral (Gatti, 2008).

The distinctive features of a PF framework are summarized in the following five points (Gatti, 2008):

1. The debtor is a project company (SPV), created on an ad hoc basis, that is financially and legally independent from the sponsors.
2. Lenders have either limited recourse or no recourse at all to the sponsors balance sheet.
3. Project risks must be carefully evaluated and assigned to the party which is best able to manage them.

4. Cash flows generated by the SPV must be sufficient to meet operating costs and to cover the debt in terms of capital repayment and interest. Moreover, cash flows are primarily used to cover these expenditures. Therefore, they can be used to pay dividends to sponsors only after operating cost and debt payments have been covered.
5. Debt is usually secured by a collateral, given by the sponsor to the lender.

As highlighted in point 2, debt can be limited or non-recourse. Under a non-recourse financing, the lender is entitled to repayment only from the profits of the project the loan is funding and not from any other assets of the borrower. Such loans are generally secured by collateral. In case of default, the lender may not seize any asset of the debtor beyond the collateral (Investopedia, 2022). The high-risk profile of this kind of loans usually entails an higher interest rate being charged. Under a limited recourse debt instead, in case of default the lender has the faculty to claim on other assets of the debtor besides the collateral. This kind of "other assets" are usually specified and agreed in the loan contract.

As opposed to PF, the private company can structure the financing of the PPP project under a traditional full-recourse corporate finance scheme. If the corporate finance route is followed, the lenders provide loans directly to the parent company, on the strength of its credit rating and balance sheet (World Bank, 2022). In case of failure of the project, all the assets on the balance sheet of the sponsor can serve as a source of repayment of the debt. However, these loans are generally unsecured, which means that they are not backed by a specific asset as collateral.

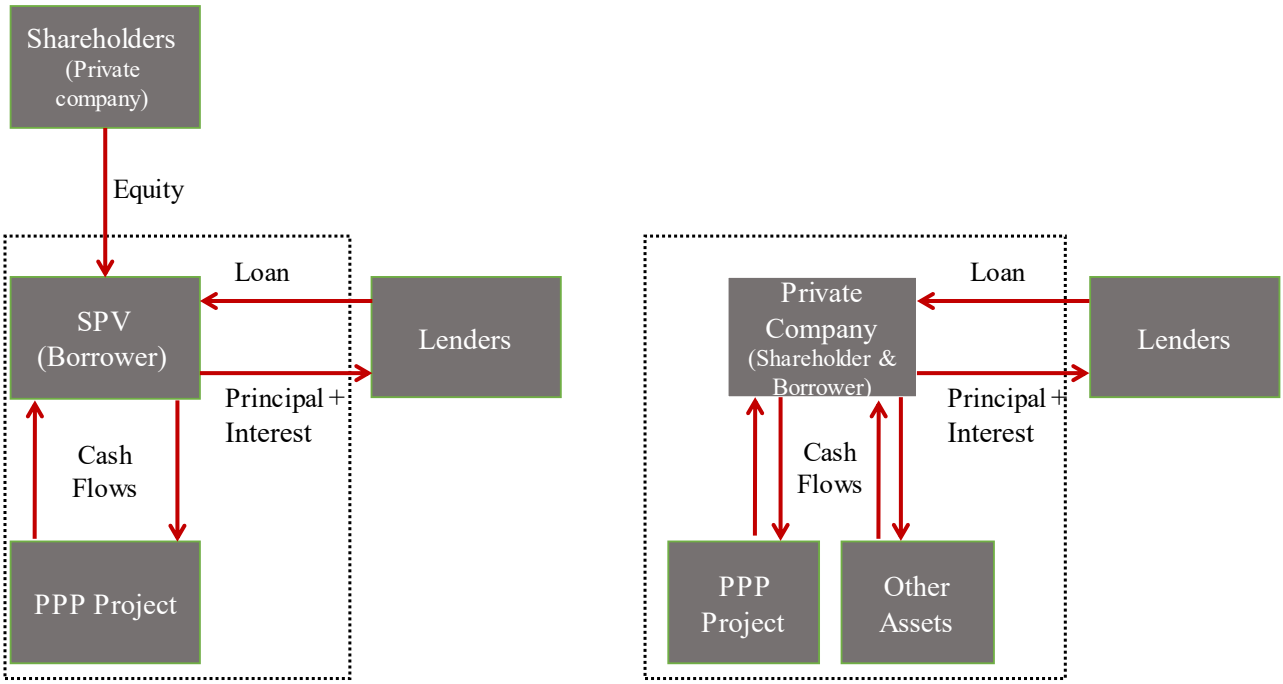

Figure 3: *Non-recourse and Full-Recourse Corporate Project Finance Structures.*

Source: *World Bank, 2022*

Recurring to a Project Finance mechanism has several advantages for the sponsor. As mentioned above, the first advantage is the opportunity to segregate cash flow and risk of the new project from the parent company. This makes it possible to isolate the sponsor almost completely from the new project undergone, with no repercussions on the riskiness level (and cost of capital) of the parent company. Secondly, the degree of leverage utilizable can be significantly higher as it does not depend on effects on borrower's balance sheet (as in the corporate finance case), but simply depends on the cash flows generated by the project (Gatti, 2008). On the other hand, PF typically entails higher costs, both in terms of higher interest rates and of higher transaction costs (advisors, monitoring, establishment of an SPV,...).

The higher costs involved and the significant reliance on future cash-flows for debt repayment, make PF mechanisms more suitable to be applied to large projects with reasonably predictable cash flows with respect to smaller, unpredictable projects. Large projects are those for which the cost of establishing an SPV and related additional costs are justified. Besides this, predictability of cash-flows must be sufficiently high. This can be checked assessing both the technical feasibility and the commercial viability of the project involved (Finnerty, 2007). Lenders will not grant money in a non-recourse PF mechanism if the underlying project involves a new, unproven technology and/or there isn't a clear, long-term demand for the project output. Moreover, even for viable projects, lenders will require to be protected against some basic risks such construction or market risk, which would otherwise expose them to equity risk. This is typically done through assurances or other contractual arrangements that transfer risks to capable parties, protecting lenders. In any case, the strongest requirement to successfully implement a PF deal is that the underlying set of assets must be capable of functioning profitably as an independent economic unit.

1.3.2 VALUING THE PROJECT

In order to ascertain whether or not a Project Finance framework can be suitable for a given initiative, it is imperative to construct a proper financial model. This is typically done by financial advisors, which will use a mixture of objective data and carefully evaluated assumptions. The aim of this procedure is to come up with estimates on cash flows, balance sheet, profit and loss statements, and a series of insightful financial ratios. Having these estimates is of vital importance for assessing the project ability to generate enough cash to repay debt and to grant a proper remuneration to sponsor equity investment. This helps explaining the importance of financial model as an instrument to

evaluate the implementation of a PF initiative. As already mentioned, a financial model is also a key element to develop for a company who wants to bid for a PPP project.

The following chapters will deepen some fundamental concepts involved in the development of a proper financial model, which really represent the core of a PF deal.

1.3.2.1 Cash flows

A first important point in the development of a financial model is the identification of cash flow components of the project. Assessing the ability of a project to generate cash can be done determining the difference between inflows and outflows before taking financial items into account, such as principal and interest repayment and dividends distribution to sponsors (Finnerty, 2007). Such a difference is named operating cash flow (in corporate finance it is usually referred to as "Unlevered cash flows"), and can be computed following the scheme below:

+ REVENUES	
- Raw materials and operating costs	
- O&M fees	
- Insurance costs	
- Taxes	= Operating cash flows (Gross)
- Increase in working capital	
- Capital Expenditure (Capex)	= Net Operating cash flows (Unlevered free CF)

Table 3: *Computation of Net Operating cash flows*

Operating cash flows are computed for each year of the project life, and typically vary a lot in size and configuration depending on the specific phase the project is incurring. During construction phase, the operating net cash flow is typically considerably negative due to the huge outflows in Capex. Conversely, once construction phase is done and operations start, the operating net cash flows will typically be positive, with the capex expenditure going to zero.

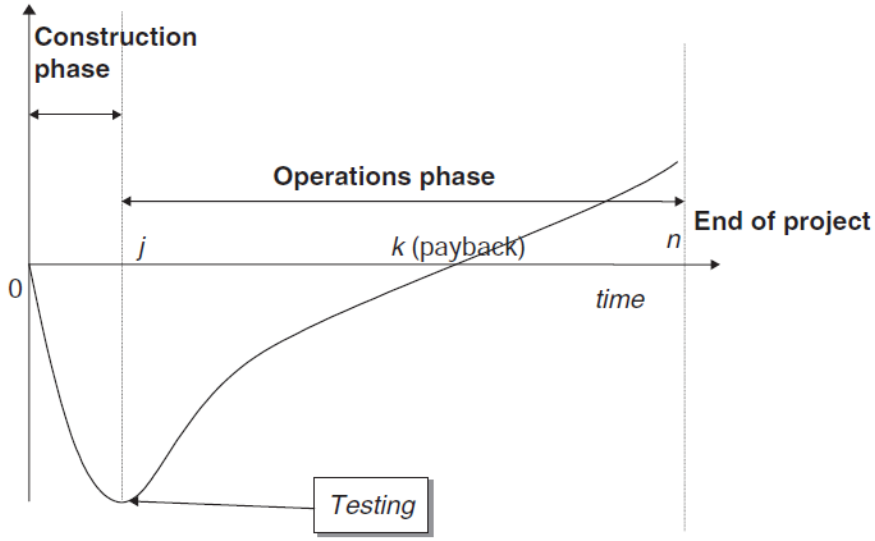

Figure 4: *Dynamic of cumulative operating net cash flows for an investment project.*

Source: *Gatti, 2008*

As illustrated in Fig. 4, during construction phase (from point 0 to j), the project isn't able yet to generate revenues, but significant disbursements for Capex are made, which are then capitalized on the balance sheet. The lower point in the negative cumulative operating net cash flows constitutes a financial need which has to be covered by lenders (banks and other financial institutions providing debt) and by sponsors conferring equity. Only after construction phase positive cash flows start emerging, as during operating phase the project start generating revenues. The financing is paid back during the project life ("Operations phase"), typically excluding last years in the planning horizon. These may be leaved as a "tail" or "grace period" (typically 1/3 of project duration), meaning that no financial constraint is burdening on the SPV (De Marco, 2021). This means that the amortization period for the loan granted to the initiative is shorter than the entire duration of the project life cycle (Gatti, 2008).

1.3.2.2 Npv, IRR, DSCR Concepts

Obtaining the profile of cash flows is the first input for determining the optimal capital structure of the deal. As already mentioned, this is composed by a consistent debt contribution from lenders and an equity injection from sponsors. The debt contribution granted by lenders is usually referred to as "Senior Debt", since it has priority over the remuneration of all other forms of financing.

Determining the optimal amount of debt and equity to use is not a smooth, straightforward process, and typically require the help of a financial modeler or arrangers. Moreover, from the perspective of financial modelers, the problem configures as a sort of closed loop: cash flows have to be used to service debt and pay dividends, but these quantities are unknown until the capital structure is defined (Gatti, 2008). Therefore, a trial-and-error procedure must be put in place. The scheme of the process is reported in the figure below. The process typically starts with the financial modeler assuming a capital structure suggested by sponsors. Sponsors also state their required level of profitability, usually conveying their expectations in terms of internal rate of return (IRR) (Gatti, 2008). Combining the supposed debt repayment plan with the hypothetical capital structure, the financial modeler is able to compute the IRR for lenders too. The capital structure chosen must be able to address the trade-off between the needs of the sponsors and the requirements of lenders (Banking community). In fact, while it is true that the project must have an attractive IRR for sponsors, if the IRR to lenders is unsatisfactory, it will be impossible to raise the necessary funds for the project. In order to compute IRR for sponsor, future positive inflows are represented by dividends distributed by the SPV, while equity capital injections have to be considered as outflows. On the other hand, while computing IRR for lenders, inflows are represented by debt repayment fees, while outflows consist of initial debt distribution. IRR is the discount rate that makes the net present value (NPV) of all cash flows (both positive and negative) equal to zero, and can be described by the formula:

$$0 = NPV = \sum_{t=0}^{n} \frac{CF_t}{(1 + IRR)^t}$$

Where:

- n = Number of periods equal to the duration of the project
- CF = Cash flow (can be positive or negative) in period t
- IRR = Internal rate of return for the party considered (depends on which CFs have been included in the numerator)

Once the two previous conditions are met, the debt capacity (represented by operating cash flows) can be compared to debt requirements to check whether the debt/equity mix is sustainable (Gatti, 2008). This is usually done through the computation of several ratios. The most diffused one is the Debt Service Coverage Ratio (DSCR). This is a financial indicator computed for each year of project life, and is obtained as follow:

$$DSCR_t = \frac{OCF_t}{K_t + I_t}$$

Where:

- OCF = Operating net cash flows in period t
- K = Principal payment in period t
- I = Interest payment in period t

The ratio is able to indicate if the cash flows generated by the project (numerator) are able to sustain the debt service required by lenders (denominator). Making an average of DSCR value through all years of the project life, it is possible to compute the Average DSCR (AVDSCR). For a project to be financially sustainable, both of these indicators must be clearly above 1, typically including a safety margin which varies depending on the risk profile of the project. The more lenders are risk-averse, the higher the value of DSCR required.

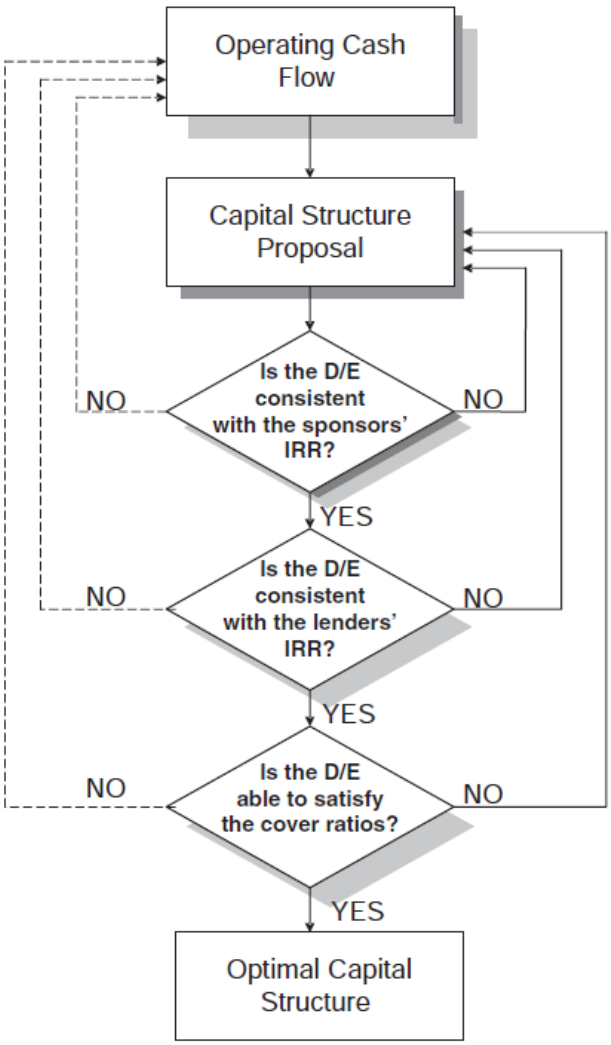

Figure 5: *Process for determining the optimal capital structure of a Project Finance operation.*
Source: *Gatti, 2008*

1.3.3 PF IN THE ITALIAN LEGISLATIVE FRAMEWORK

Having described the most important aspects of a Project Finance initiative, this chapter focuses on the application of this financing mechanism in PPPs under the Italian Legislative Framework.

Since now, PF has been described simply as an alternative way of financing projects. However, for the Italian legislation, this has several implications. In fact, as described in art. 183 "Codice dei Contratti Pubblici", it is apparent that PF is a particular form of financing which also involves a well-defined administrative procedure. Therefore, PPPs delivered through a PF scheme are somehow treated as a peculiar form of PPPs. This is proven by the fact that in art. 181 of the code, the Italian legislator list them among the other recognized forms of PPPs. The development of an ad-hoc procedure is linked to the peculiarities of this form of financing, and it basically impact the awarding process. Two different awarding process are available for a PPP delivered through a PF mechanism, depending on whether the initiative is taken by the Public Administration or by the Private Party. In both cases, the financing for the project can come totally or partially from the private party.

In the first case (Art. 183, paragraph 1-14, "Codice dei Contratti Pubblici"), the Public Administration awards projects that has previously included in their planning tools ("Programma Triennale"). Contracts are awarded on the basis of a technical and economic feasibility project, which is prepared by the public entity. Legal documents must specify that the Administration may ask the potential winning bidder to make modifications to the final project, and just upon their acceptance and any subsequent adaptation to the business plan the contract will be awarded. If the potential winning bidder does not agree to make such changes, the administration may ask other bidders to comply with such changes, and awarding the contract to the one of them which accept. Within the required documentation for the offer, bidders must include a final project, a business plan and a financial model certified by a bank and a draft contract with service specifications. Bidders must also demonstrate somehow the involvement and interest of financial institutions to finance the project. Offers are evaluated by the Administration based on the criteria of the best quality at the lowest price. The procedure ends with the signing of the PPP contract and with the subsequent signing of financing agreements (Financial Close).

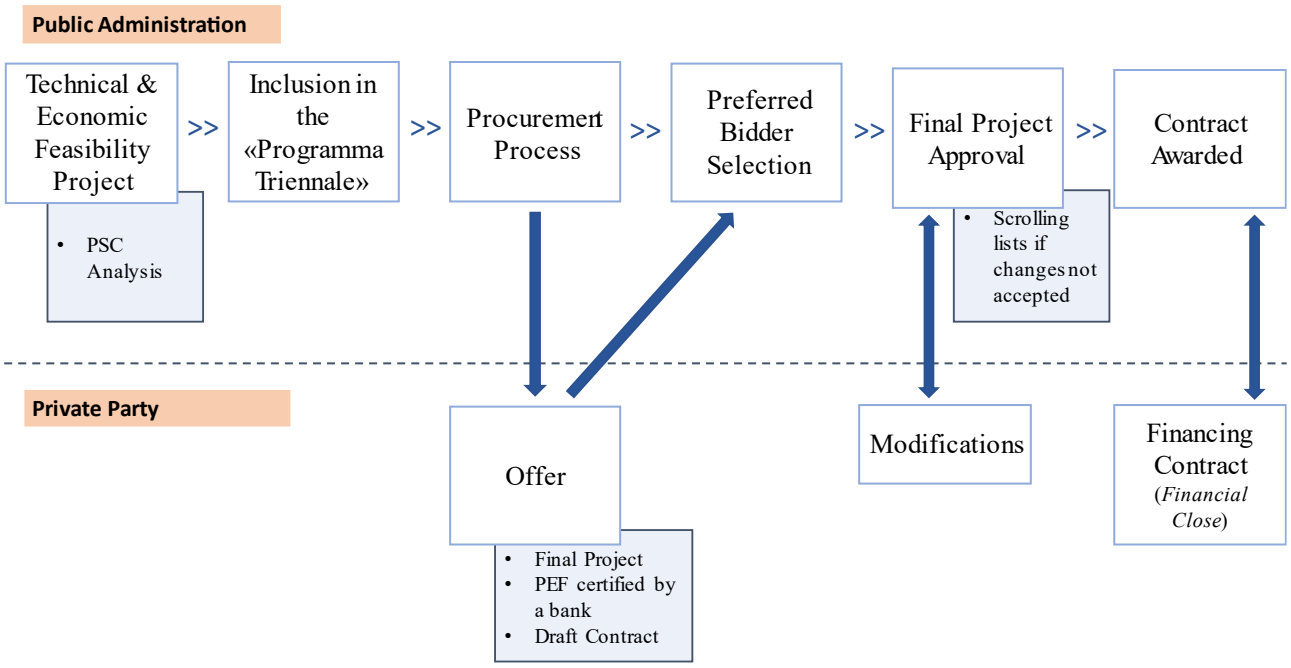

Figure 6: *PPP Process - Public Administration initiative.*

Source: *De Marco, 2022*

The second kind of awarding process for a PPP delivered through a PF mechanism concern an higher involvement of the private party, which takes the initiative and directly present to the Public entity a project proposal, which has not been previously planned in the programming tools of the administration. (Art. 183, paragraph 15, "Codice dei Contratti Pubblici"). The initial proposal must contain a feasibility project, a business plan, a financial model certified by a bank and a draft contract with service specifications. The administration shall evaluate the proposal within three months, carrying out a feasibility check and inviting the proposing operator to make any necessary changes to the feasibility project; if the proposer does not make the required changes, the proposal will be discarded. In case of positive evaluation, the approved feasibility project is inserted into the programming tools of the administration ("Programma Triennale"), and the bidding process can start. The PPP contract is awarded on the basis of the approved feasibility project and follow the same awarding criteria of the abovementioned procedure. Other bidders can participate and present their own offers, but the initial bidder (who made the initial proposal) enjoys a pre-emptive right: should his offer be less convenient, he has the chance to be awarded the project if he comply with the same contractual conditions of the best bidder within 15 days.

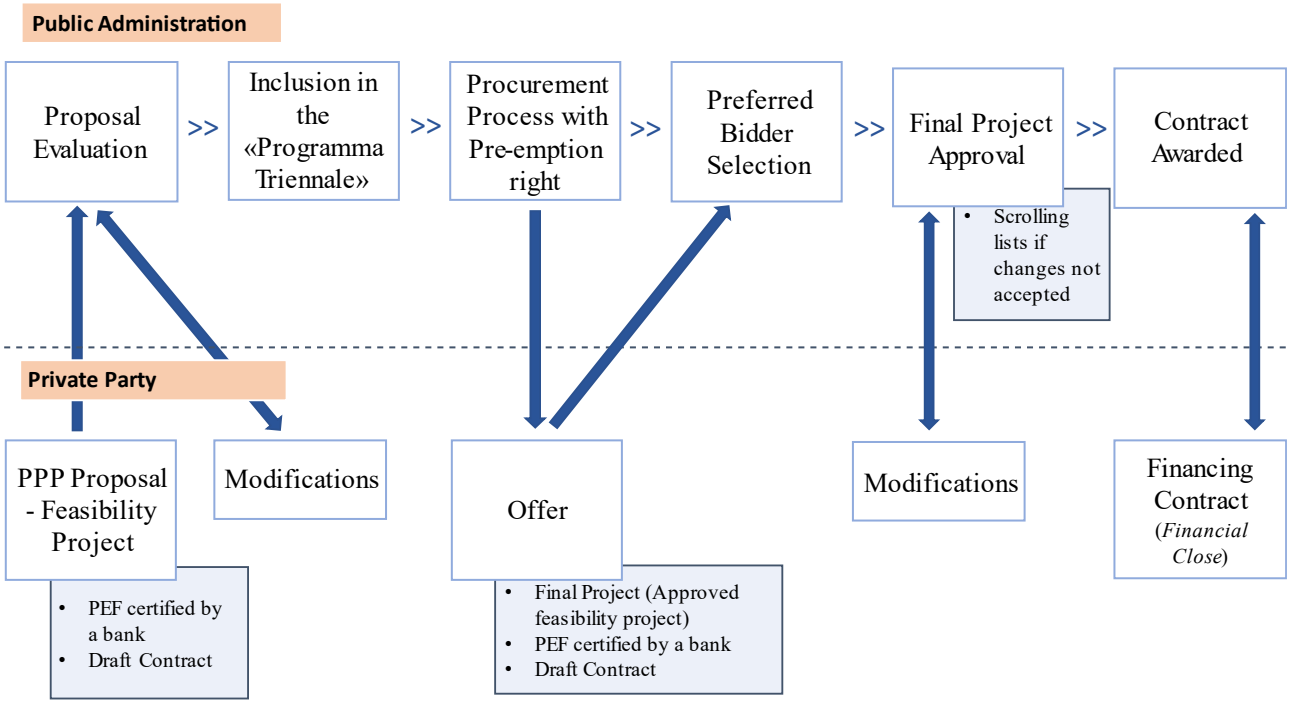

Figure 7: *PPP Process - Private initiative.*

Source: *De Marco, 2022*

1.3.4 PEF

As explained in this chapter, a company bidding for a concession to deliver through a PF scheme must develop and present a financial model (PEF) as part of the bidding documentation. This must be certified by a bank. As far as possible, the Administration should ask bidders to attach to the documentation a committed financing package for the funders. This will consistently speed up the finalization of the financing agreements after the PPP contract has been formalized and signed. Difficult financial market conditions may prevent this committed procedure, increasing the time to reach the financial close. Moreover, the investment involved is typically so consistent that it is impossible for a single bank to finance it all. Lenders will usually come together in "Club Deal" to grant the necessary funds for the project. In any case, the soundness of the commitment of the funders to finance the project at the presentation of the offers depends on the specific type of project and the market it addresses. However, it is always advisable for the Administration having a private party able to demonstrate that the entities required to provide debt capital and equity contributions has examined and accepted the general structure of the PPP and the main contractual provisions.

1.4 Project Risk Management in PPPs

A successful PPP initiative is based on a careful analysis of all the risks the project will bear during its economic life. Such risks can arise either during the construction phase, when the project is not yet able to generate cash, or during the operating phase (Gatti, 2008). Risk is a crucial factor since it can deeply affect the project ability to repay debt and generate earnings to shareholders. Cash flows can be highly sensitive to risk events, and if risk hasn't been anticipated and properly hedged it can generate a cash shortfall (Gatti, 2008). That is one of the major reasons that has led to the establishment of proper risk management practices in PPPs.

Project risk can be defined as an uncertain event or condition that, if it occurs, can positively or negatively affect the achievement of project's objectives (De Marco, 2021). In more detail, a risk can be seen as a combination of two basic components: the likelihood of occurrence of a certain problem and the corresponding impact of the damage caused (De Marco, 2018). Therefore, Project Risk Management is the discipline that helps maximizing the probability and consequences of positive events while minimizing the probability and consequences of adverse events to projects objectives (PMI, 2016).

For each party involved in a PPP, project risk management is a crucial issue. As previously analysed, banks and other financial institutions must make a clear assessment of credit risks and check if other risks have been correctly transferred, to see if the risk profile is in line with the IRR offered. Sponsors as well will make the same check with respect to their IRR while developing the financial model. However, as already stated, the perspective adopted in this paper is the one of the consultant of the Public Administration. Therefore, risk management will be tackled taking the perspective of the Public Authority, which is interested in defining the right scheme of PPP project and in granting that is worth pursuing it, as it generates a proper amount of value (Value for Money concept is tackled in the following chapters). Allocation of specified risks to the private entity is also one of the major points that characterize the definition of PPP.

From the point of view of the Public Administration, risk management proves as a useful tool for the following issues:

- To define legally the PPP scheme through a proper risk allocation between the parties involved (Which risks are transferred? Based on this, which kind of PPP contract is to be developed? (BOT, DBLT,…).

- To evaluate whether risks transferred are in line with economic returns granted to the parties involved in the contract and to set up a monitoring system.
- To evaluate the On/Off balance sheet recording of the PPP operation.
- Serve as an input to the PSC analysis, done prior to the bidding process to check whether greater value is created with respect to traditional procurement (PSC analysis).

Risk Management is a discipline which really constitute the basis of a correct allocation of project risks. Five main steps are involved in PPP Risk Management (Akintoye, Beck & Hardcastle, 2008), and will be explained in the following chapters, mainly focusing on the first three, which are the most relevant for the purpose of this paper:

1. Risk Identification
2. Risk Analysis
3. Risk Allocation
4. Risk Response
5. Risk Monitoring

Figure 8: *The five steps of PPP Risk Management*

1.4.1 RISK IDENTIFICATION

Risk identification is the first phase of Risk Management. It allows to identify all the relevant risks which are involved in the project under analysis. The identification and complete registration of relevant project risks is crucial, because a risk that is not identified at this stage may be excluded from further analysis, with significant impact on project outcomes. There are many potential risks that can be generally encountered in a PPP project, and several techniques can be used to properly identify

them. Interviewing experts and project managers with specific experience in similar projects is a first valuable alternative (De Marco, 2018). Standard checklist of frequent risky evets is another instrument that can be consulted. Another useful approach might come from "what-if" analysis: this basically consist in asking a series of "what would happen if…" questions, with the goal of detecting all possible risky events (De Marco, 2018).

Moreover, the Risk Breakdown Structure (RBS) is frequently used in parallel with the previous techniques. This is a technique that lists risks and decompose them from the more general to smaller ones, until there is a level of granularity that allows the analysis of the individual risk in terms of probability and impact.

1.4.2 RISK ANALYSIS

The second phase involved in risk management is risk analysis. This basically consist in the quantification of the risk, either in terms of impact and of probability. The techniques used in this phase are divided into three types:

- Qualitative: these methodologies follow an approach of risk analysis through a descriptive qualitative assessment. They do not transform the probability of occurrence and the impact of the risks in numerical form, but rely exclusively on a range of "word values" ("very high", "high", "medium", "low", "very low").
- Quantitative: a quantitative analysis of risk relies purely on the use of numbers (De Marco, 2018). The approach of these techniques is based on the numerical and timely estimation of the probabilities and impacts associated with project risks. Quantitative techniques are certainly the most accurate. However, it should be considered that they require a large number of historical data as an input for the risk probability and impact estimation, which usually risk managers do not have.
- Semi-quantitative: this is a widely-used methodology which is a sort of compromise, a mix between the previous two techniques. The evaluation is carried out in qualitative terms and then transformed into numerical figures. The project risk manager can often rely on standard checklist in order to make this conversion.

1.4.3 RISK ALLOCATION

The objective of this phase is to understand what is the correct allocation of risks identified in previous steps. As already mentioned, for a contract to be classified as a PPP, it must occur a substantial risk transfer to the private party. This, however, doesn't imply that all project risks have to be allocated

to the private entity. Instead, a careful evaluation of project risks must lead to allocate them to the party which proves more suitable to manage them. Only in this way the project will be able to create and deliver the maximum amount possible of economic value. The Italian legislator has appointed the Autorità Nazionale Anticorruzione (ANAC) to develop general guidelines to be used as a reference point on the risk transferral issue (Art. 181, paragraph 4, Codice dei Contratti Pubblici). More specifically, ANAC has developed a tool, called "Matrice dei rischi ANAC", which basically covers all Risk Management phases. This risk matrix has the aim to facilitate both the private and the public entities in the development of a proper risk management procedure, by providing a general framework to be consulted.

RISK TYPE	Probability	Impact (costs or delay)	Risk mitigation tools	Risk borne by Public Administration (YES/NO)	Risk borne by private entity (YES/NO)	Article of the contract identifying the risk
Design Risk						
Performance Risk						
Archaeological Risk						

Table 4: *"Matrice dei rischi ANAC" with three possible risks identified.*

Source: *ANAC, 2018*

Besides the provision of the risk matrix, and aligning with Eurostat guidelines[1], the Italian legislation and the ANAC have identified three major risk categories linked to PPPs projects, together with a fourth generic macro category (ANAC, 2018). These are a general reference which can be used as a first approach to populate the risk matrix, but care should be taken, as each initiative has its own project-specific risks, and therefore a case-by-case evaluation must be conducted. The risk categories identified, with the relative sub-categories, are the following:

- *Construction* Risk: linked to the delay in the schedule and in the delivery of project outcomes, to the failure in satisfying agreed project standards, to the increase in costs, to incidents of technical type during contract execution and to the lacked completion of the work (Art. 3,

[1] https://ec.europa.eu/eurostat/documents/1015035/2041337/Treatment+of+PPPs.pdf/af9e90e2-bf50-4c77-a1a0-e042a617c04e

paragraph 1, lett. aaa), Codice dei Contratti Pubblici). Among this general category can be included the following specific risks:

  - *Design Risk,* resulting from design errors or omissions, which significantly affect the timing and/or cost of the work.
  - *Execution Risk,* linked to the poor execution of project activities and to the failure to achieve project construction goals.
  - *Risk of input cost increase* or inadequacy or unavailability of those foreseen in the project.
  - *Risk of incorrect cost estimation and wrong scheduling of the project activities*.
  - *Risk of contractual default by suppliers and subcontractors.*
  - *Risk of unreliability and inadequacy of the technology used.*

- *Availability* Risk: linked to the private party's ability to provide the contractual services agreed, both in terms of volume and quality standards (Art. 3, paragraph 1, lett. bbb), Codice dei Contratti Pubblici). This risk typically refers to the post-construction phase. Among this general category can be included, as an instance, the following specific risks:
  - *Extraordinary Maintenance Risk,* arising from an inadequate design or construction.
  - *Performance Risk,* linked to the non-compliance and dissatisfaction of project Key Performance Indicators (KPI), which have been contractually agreed.
  - *Risk of total or partial unavailability of the structure and/or of services to be provided.*

- *Demand* Risk: linked to changes and fluctuations in market demand for the service that the private party must provide. This is typically linked to the possible lack of users and consequent reduction in cash flows This risk is usually intended to refer both at the overall generic market demand for the service offered and at the spefic product demand at microeconomic level, considering possible competitors in the market segment (Art. 3, paragraph 1, lett. ccc), Codice dei Contratti Pubblici).
- *Other Risks:* in this cathegory are listed twelve other risks which are not covered by the three previous macro-categories. These are the following:
  - *Commissioning Risk,* describe the case for which the project does not receive the consent by other public bodies or by other stakeholders, resulting in delays in the implementation and occurrence of disputes, that, in extreme cases, can entail the cancellation of the initiative.

- *Administrative Risk,* related to the significant delay or refusal to issue authorisations (permits, licenses, clearances, etc.) by entities in charge, resulting in delays in the execution of project activities.
- *Expropriation risk,* linked to delays from expropriation or to higher expropriation costs due to incorrect design.
- *Environmental and Archaeological Risk,* related to soil conditions, and the need for remediation due soil contamination and risk of archaeological findings, resulting in delays in carrying out the work and increase in costs for environmental rehabilitation or archaeological protection.
- *Legislative Risk*, arising from the variation of one or more laws or regulations with an impact on project costs for regulatory compliance.
- *Funding Risk*, linked to the failure to find financial resources necessary to cover the investment.
- *Financing Risk,* related to a cost increase for financing, namely in commissions or in interest rates.
- *Risk of Insolvency* of the entities that have to pay the price of the services offered.
- *Industrial Relations Risk*, concerning relations with other parties (Social parties) that adversely affect costs and delivery times and that cannot be considered Force Majeur.
- *Residual Value Risk,* that is the risk of returning the asset with a lower residual value than expected.
- *Obsolescence Risk,* meaning the risk of technical obsolescence, tied to faster technical obsolescence of the assets, with impact on maintenance costs and/or on predetermined technical standards.
- *Interference Risk,* risk of possible presence, in the tracts of land affected by the initiative, of services such as gas, water, electricity etc.

1.4.3.1 On/Off Balance Sheet recording

The classification in the previous paragraph allows to enrich and complete the definition of PPPs given so far. In fact, the Italian Legislation proceed in defining PPPs as a contract in which the transfer of risk to the private economic operator entails the allocation to this latter, in addition to the construction risk, also of the risk of availability or, in the case of profitable external activity, of the demand risk for services rendered (Art. 180, paragraph 3, Codice dei Contratti Pubblici).

Having previously defined these categories of risk, now the focus must shift to a clarification on the risk transferral concept.

As already mentioned, in order to delve deeper on the subject, the Italian Legislator has appointed the Autorità Nazionale Anticorruzione (ANAC) to develop general guidelines to be used as a reference point on the risk transferral issue and on the monitoring phase (Art. 181, paragraph 4, Codice dei Contratti Pubblici). In particular, ANAC clarifies that public authorities shall identify and assess risks related to the specific PPP project, and allocate them to the party which proves more suitable to manage them, paying particular attention to those risks which can, with reasonable certainty, be considered to be borne by the private partner and must, therefore, be allocated to it.

ANAC specify that a risk cannot be considered as transferred to the private party if:

- With regard to the Construction Risk, this cannot be considered as transferred to the private party if the Public Administration is required to pay the amounts stipulated in the contract (public contribution) without prior verification of the state of progress of the works and the conditions in which the work is delivered, or in the event that it is obliged to systematically bear any additional cost regardless of the cause (ANAC, 2018).
- With regard to the Availability Risk, this cannot be considered as transferred to the private party if the payment of contractually agreed fees is not strictly related to the volume and quality of the services provided; if the contract does not provide for an automatic penalty system capable of significantly affecting the revenues and profits of the economic operator with a resulting overestimation of the price paid (ANAC, 2018).
- With regard to the Demand Risk, this cannot be considered as transferred to the private party when the public administration enters into a contractual obligation to provide the economic operator with certain amounts of consideration irrespectively of the actual level of demand expressed by end-users, in such a way that changes in demand have a marginal influence on the profits of the economic operator. Therefore, in order to ensure the effective transfer of this risk, particular attention should be paid to the estimation of demand and the determination of the related levels of consideration while analysing the business plan (PEF), so that it really reflects the exposure of the economic operator to fluctuations in demand. The typical case is when the final demand is underestimated to such an extent that it is virtually impossible for the economic operator to incur losses related to the decrease in demand.

One of the major advantages for the Public Administration (P.A.) brought by PPPs contracts is the possibility to record assets involved off government balance sheet. Because of the European Stability

and Growth Pact it is not possible for an EU member state to have a public deficit exceeding 3% of GDP and a public debt exceeding 60% of GDP. Consequently, major public works financed largely by debt are often not performed, especially in countries where public debt is already consistent. However, thanks to PPPs, it is possible for Governments to avoid generating liabilities having the infrastructure recorded off balance sheet, enabling them to maintain compliance with existing financial covenants. Eurostat recommends that the assets involved in a public-private partnership should be classified as nongovernment assets, and therefore recorded off balance sheet, if both of the following conditions are met (Eurostat, 2004):

1. The private partner bears the construction risk

2. The private partner bears at least one of either availability or demand risk.

For the development of this guideline, Eurostat has made reference to the three main categories of "generic" risks, in which a series of sub-risks are included. However, Eurostat clarifies that "bearing a generic risk" for one party means that this party bears the majority of related sub-risks, not necessarily the 100% of them (Eurostat, 2004).

It is apparent from the discussion that a proper identification and allocation of risks assumes a central role for the development of a successful PPP framework.

1.4.4 RISK RESPONSE & MONITORING

The last phase in risk management consist in planning actions (ex-ante) in order to respond to project risks. Given the allocation of most risks to the private sector, these two phases are mainly managed by this party, which is able to carry out its operational functions in a more efficient way than the public entity. Four risk response strategies can be taken, depending on the likelihood and impact of the risk under analysis, as shown in Figure 9.

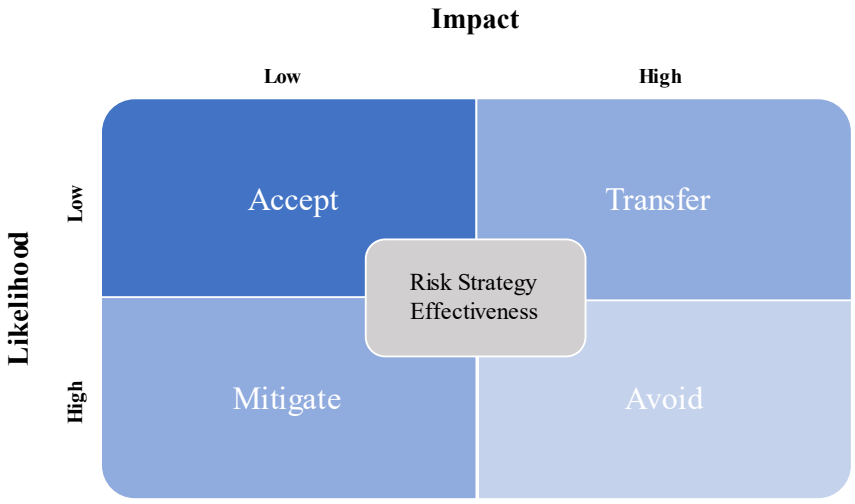

Figure 9: *Method and strategy of facing risks according to their probability and impact.*

Source: *De Marco, 2021*

The monitoring phase is crucial for each risk for which a mitigation or transfer response has been defined. Usually some "trigger conditions" have to be defined along with the response actions. During the monitoring phase, the project manager must ensure that these conditions are effectively monitored and controlled and that the corresponding actions are carried out as defined in a timely manner.

1.5 Value for Money assessment through the PSC methodology

Nowadays, it is increasingly important for public administrations to direct their spending towards more effective and efficient solutions, that is, to reach the Value for Money (VfM) in the investment pursued. In fact, VfM can be defined as the achievement of the optimal combination of benefits and costs while delivering services users want, and it is therefore a crucial factor to consider during the proposal of a PPP project (Worldbank, 2022).

VfM is not an absolute concept but implies the comparison between different procurement alternatives. In fact, VfM assessment is a method to reach the best value for the public administration in acquiring services by comparing different contractual options.

One of the most popular tools for quantitatively assessing VfM for PPP projects is the Public Sector Comparator (PSC). This is an instrument that can be used in relation to all forms of PPP. As already mentioned in the previous chapters, PSC is generally conducted in the planning phase (1. Project Identification Phase). However, it can also be a useful tool to compare different offers during the selection of a preferred bidder in the Procurement Procedure phase.

The steps involved in carrying out a VfM analysis leveraging PSC methodology are:

- Computing the PSC, which estimates the life-cycle cost (including operating costs and costs of risks, which are not typically considered in conventionally procured projects) of delivering the project through a **traditional procurement** scheme, expressing it in terms of Net Present Value (NPV). The PSC estimates the hypothetical risk-adjusted cost if the initiative were to be designed, financed, constructed and operated by the public sector (FHWA, 2012).
- Following the same approach, proceed to estimate the life-cycle cost of delivering the project through a **PPP** scheme.
- **Compare** the cost of the two alternatives. The difference between the reported values represents the measure of the VfM expressed in terms of cost savings of an alternative to the other. From the public administration point of view, a PPP is able to deliver VfM if its estimated cost is lower than the one resulting from a traditional procurement scheme.

It is apparent from the description above that PSC really constitute a key/fundamental indicator while conducting the assessment. The PSC is generally composed by three elements:

- The "*Raw" PSC*, which includes all capital and operating costs (both direct and indirect) linked with the financing, design, construction and maintenance of the initiative.
- *Transferable Risks cost*, which is the value of all risks that are transferred to the private entity and which are highlighted in the "Risk matrix".
- *Retained Risks cost*, which refers to the value of all risks that are not transferrable to the private party.

The PSC is therefore the sum of the above components:

$$PSC = "Raw"PSC + Transferable\ Risk + Retained\ Risk$$

1.5.1 CHOICE OF THE DISCOUNT RATE

As already mentioned, PSC is a cost which is expressed in terms of NPV. Therefore, the choice of the discount rate to be used for discounting cash flows is really a matter of relevance.

The European Commission has recommended in 2003 through the "Guide to the cost-benefit analysis of investment projects" a discount rate value r between 3% and 5.5%. These values have been confirmed by the same reference guide for the period 2014 – 2020, with a suggested discount rate of 4%.

In Italy, the Conference of the Presidents of Regions and the Autonomous Provinces in the " Guida per la certificazione da parte dei Nuclei regionali di valutazione e verifica degli investimenti pubblici" reported a conventional discount rate for public investment cash flows of 5%. However, in practice, the rate applied by Cassa Depositi e Prestiti to loans granted over a period equal to the duration of the concession is often used as the applied discount factor.

Once the discount rate has been chosen, it may be necessary to adjust it to the value of the expected inflation rate. This is usually the case if cash flows are expressed in nominal terms. The discount rate to be applied to project cash flows will therefore be modified using the Fisher equation as follows:

$$(1 + i) = (1 + r)(1 + \pi)$$

Where:

- r is the real interest rate;
- i represent the nominal interest rate;

- π indicates the inflation rate, which is the *expected* inflation rate during an ex-ante analysis, or the *actual* inflation rate if the analysis is conducted ex-post.

Fisher equation can be approximated to:

$$i = r + \pi$$

In other terms, Fisher equation allows to obtain the nominal interest rate, that has to be applied to nominal cash flows during the discounting.

1.5.2 COSTS AND RISKS QUANTIFICATION

Project costs and revenues are usually easily identifiable and quantifiable by administrations, and often already available as used for the economic - financial assessment of the investment (PEF). Instead, the identification and quantification of risks is more complex and delicate. The main difficulties lie in the completeness and reliability of the estimates as the administration must avoid neglecting important risks and must be able to assess the probability and economic impact in case of occurrence (ANAC, 2009).

For the calculation of main project costs, it is possible to use an income statement-like scheme that takes into account, for each concession year, investment costs and direct and indirect operating costs of the project. In the case of revenues earned from the management/operations of ancillary services related to the initiative (e.g. parking spaces, bars, etc.), these must be subtracted from PSC total costs, or, alternatively, must be included in the PFI as an opportunity cost.

The following table lists the main cost categories usually involved in a project, identifying for each the major differences between the traditional PSC case and the PFI case (taken as a major example of PPP project).

Cost Category	**Considerations PSC vs PFI**
Design Cost	For PFI, the cost of preparing the proposal must be added to the value of the PSC. These include the legal, administrative, tax, financial and specialist services generally required for the draft of the final project, a draft contract and a business plan (prepared by the private party).

Construction Cost	Can be generally considered the same for both PSC and PFI.
Financing Cost	Financing cost is generally higher for a PFI initiative with respect to the PSC case. This is linked to two main reasons: • The cost of advisory and structuring activities for the arrangement of a "Project Finance" financing scheme. • The financing is negotiated by the Private Partner who generally has access to less favourable financial conditions than those available to the PA.
Operations & Maintenance Cost	Can be generally considered the same for both PSC and PFI.

Table 5: *Differences in cost categories between the traditional PSC case and the PFI case*

It is apparent that a PFI project typically involves higher costs than a traditional procurement project (PSC). Therefore, a proper risk transfer is necessary to make PFI a viable alternative able to generate VfM.

In fact, once risks have been identified, analyzed and allocated as discussed in the "Risk Management" chapter, their value (i.e., the likely cost of these risks should they occur) needs to be incorporated into the Value for Money (VfM) analysis in order to compare procurement models on a risk-adjusted basis (FHWA, 2012). In particular, all transferable risks cost (expressed in NPV terms) must be added to the PSC, in order to obtain the "PSC with Risks". This will be the figure that has to be compared to the PFI cost, in order to assess the VfM of the initiative.

$$PSC\ with\ risks = \text{"Raw"}\ PSC + Transferable\ Risks\ Cost$$

Risks quantification can be done according to the methodologies presented in the "Risk Management" chapter. As part of this, ANAC has developed some standard tables to be used for risk analysis in VfM assessment. These have been obtained analysing 32000 projects delivered through traditional procurement between years 2000 – 2007 and highlight the probability and impact of major project risks.

Classe di scostamento (%)	*Efficienza finanziaria e temporale - % interventi con scostamento finanziario*	*Efficienza finanziaria e temporale - % interventi con scostamento temporale*
Nullo (<= 0)	25%	23%
Lieve (>0 <5%)	30%	2%
Moderato (>= 5% < 20%)	33%	9%
Forte (>= 20%)	12%	66%
Tot	100%	100%

Table 6: *Example of ANAC table for transferable risk analysis – Construction Costs Risk and Risk of Delay in Construction*

However, as will be shown in the guidelines developed during the research, this is a rather ineffective method for risk quantification, especially when considering PPP projects on private initiative. In fact, the values reported are not up-to-date, and are not specifically related to the type of PPP contract considered.

For simplicity, the value of retained risk is usually considered the same for both PSC and PFI, and therefore just the transferable risks part is included in computations.

Finally, after having obtained PSC with risk, and having understood the PFI cost, these two figures have to be compared, in order to determine whether the project initiative is able to generate VfM, and it is therefore worth pursing it.

$$VfM = PSC\ with\ Risk - PFI$$

From the above formula it follows that:

PSC with Risk > PFI	PFI initiative is able to generate VfM
PSC with Risk < PFI	PFI initiative does NOT generate VfM

Table 7: *VfM evaluation*

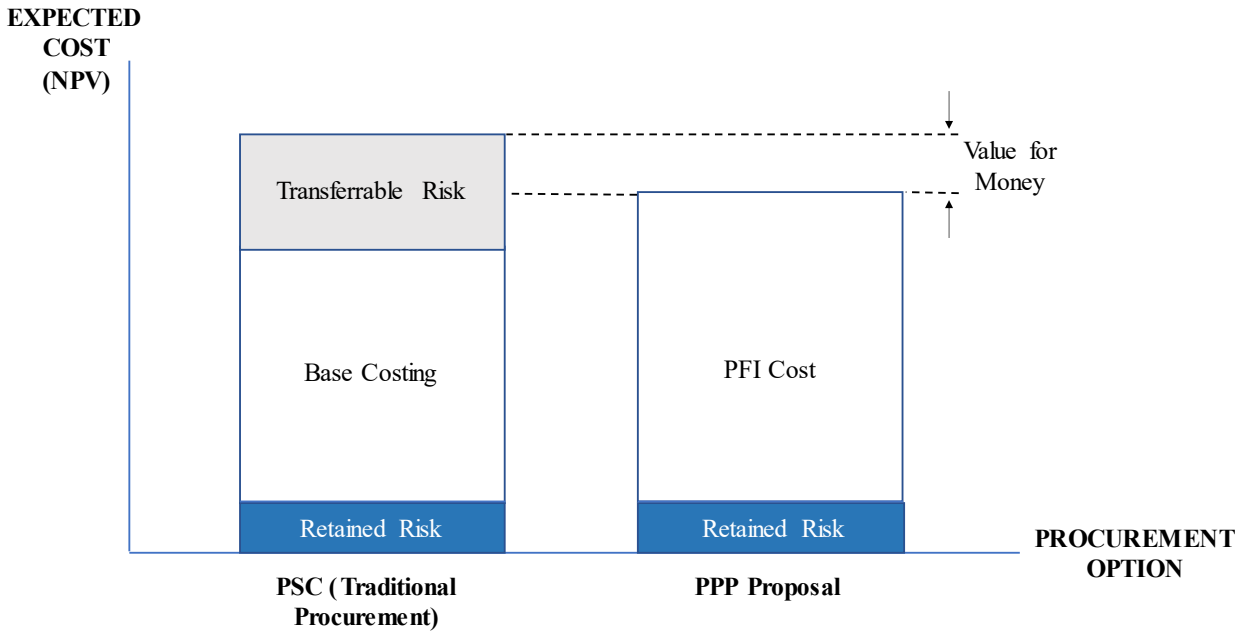

Figure 10: *VfM composition.*

Source: *Aldrete, R., Bujanda, A., & Valdez, G. A., 2012*

1.5.3 EVOLUTION AND PERSPECTIVE AT INTERNATIONAL LEVEL

The PSC is a management tool used by several foreign administrations. Of particular interest in this regard is the experience of England and Australia, countries that have developed well-defined VfM assesssment processes.

In England, the PSC calculation has been mandatory for years. In particular, the British Government introduced in 2007 the "Value for Money assessment guidance". This is a document with a standard excel sheet attached that, through the inclusion of a series of input variables, proceeds in a semi-automated way to the comparison of the traditional procedure to the PFI alternative. This allow to obtain an assessment leveraging less subjective tools which are easier to use for the parties involved.

Different countries have identified their own PSC calculation methodology, which can be more or less standardized. In Italy, using the PSC is currently optional but highly recommended. Given the usefulness of this indicator, however, it may be also necessary for the Italian country to formalize, through specific guidelines, the calculation method of this indicator, leveraging on the benefit of having a standard procedure for calculations.

2. THE EUROPEAN PPP MARKET

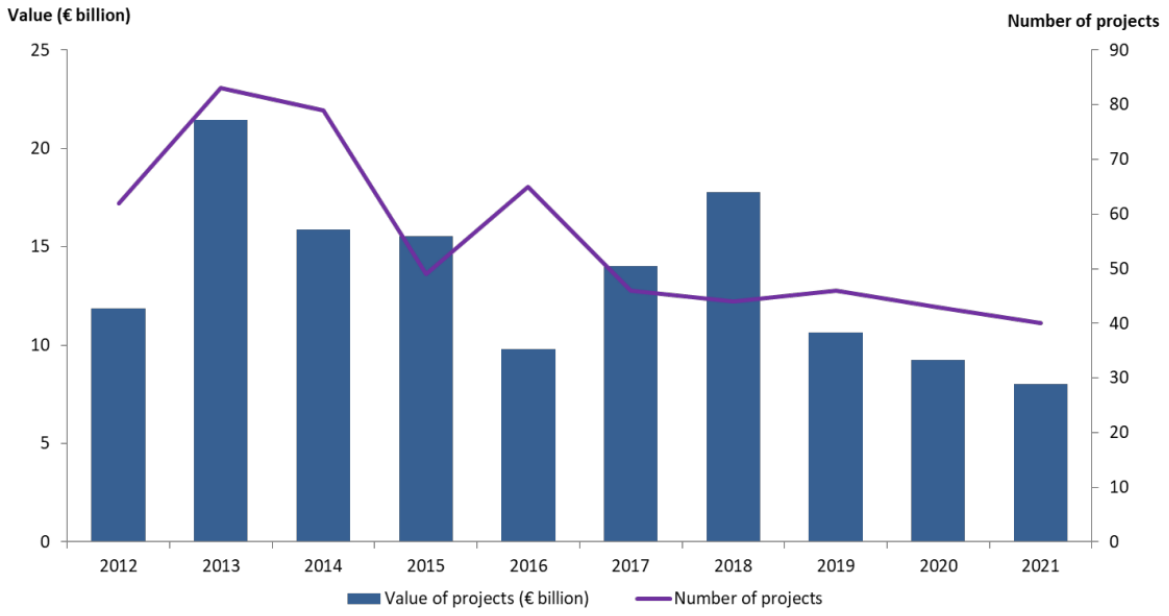

Figure 11: *Ten-year view of the European PPP market by value and number of projects (2012-2021).*

Source: *EIB, 2022*

In 2021, the European market for PPP transactions recorded an aggregate value of €8.0 billion, with a decrease of 13 percent compared to 2020, where it stood at €9.2 billion (DIPE, 2022). The number of operations (40) also dropped slightly in comparison to 2020. The decrease in the volumes and number of PPP contracts closed in 2021 can be attributed, to a large extent, to the impact of COVID-19 on the different European countries (DIPE, 2022). Indeed, COVID-19 seems to be the main culprit behind the downward trend which has been recorded in recent years. In fact, the framework outlined above has been significantly affected by the effects of the pandemic and the resulting temporary closure measures (lockdown), which have significantly impacted the activation of new PPP initiatives and the related awarding procedures (DIPE, 2022). In addition, the resulting unstable economic situation has certainly affected the financial equilibrium of the business plans of several PPP initiatives, making the financial closing process more challenging. Despite the termination of the state of health emergency, many economic effects of the pandemic are still ongoing and are likely to linger for years to come.

With regard to the main sectors involved in PPP projects at the European level, the transportation sector is confirmed as the largest market in 2021, both in terms of value, with 6.0 billion euros in transactions, and in terms of number of projects, with 16 projects which have reached the financial

close in 2021 (DIPE, 2022). The second largest investment sector was the environmental one, followed by telecommunication. The Healthcare sector, although growing compared to past years, remains in a marginal position, showing wide room for improvement.

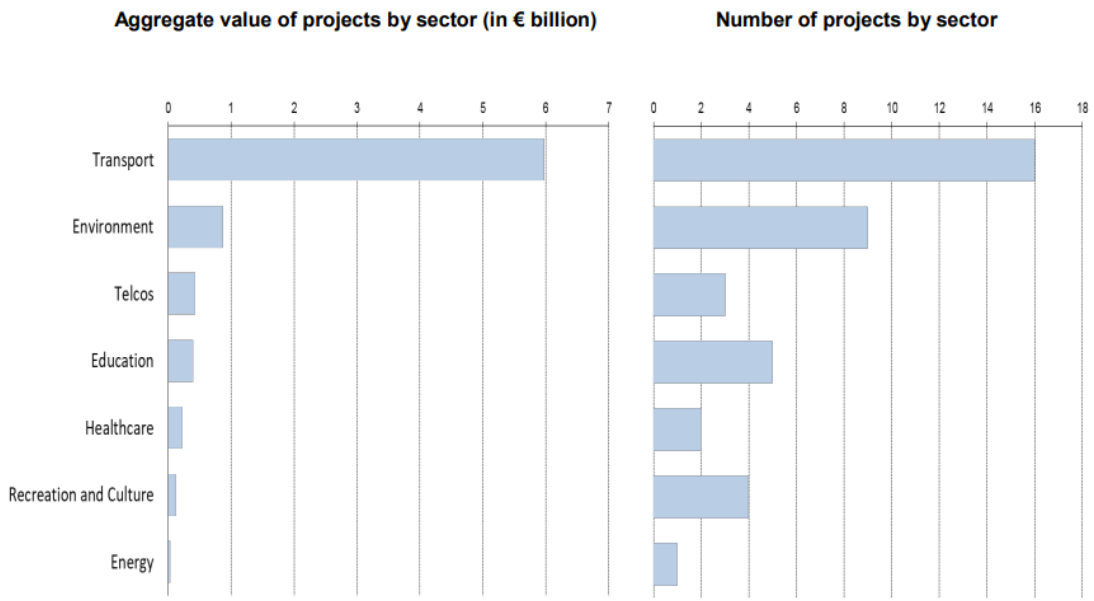

Figure 12: *Sector breakdown by value and number of PPP projects in 2021.*

Source: *EIB, 2022*

By proceeding to a cross-country comparison , although in 2021 Italy was the largest PPP market in Europe in absolute value by individual projects (due to the inclusion of the €2.1 billion Concession for the construction and operation of the Pedemontana Lombarda Motorway), the leadership of the largest PPP market in terms of the number of projects above €20 million in 2021 belongs to France, with 17 closed contracts (DIPE, 2022). In particular, also considering data from previous years, it can be said that the UK and France continue to be the leading countries in the PPP market in Europe, both in terms of value and number of contracts awarded, while Italy is currently in a less prominent position.

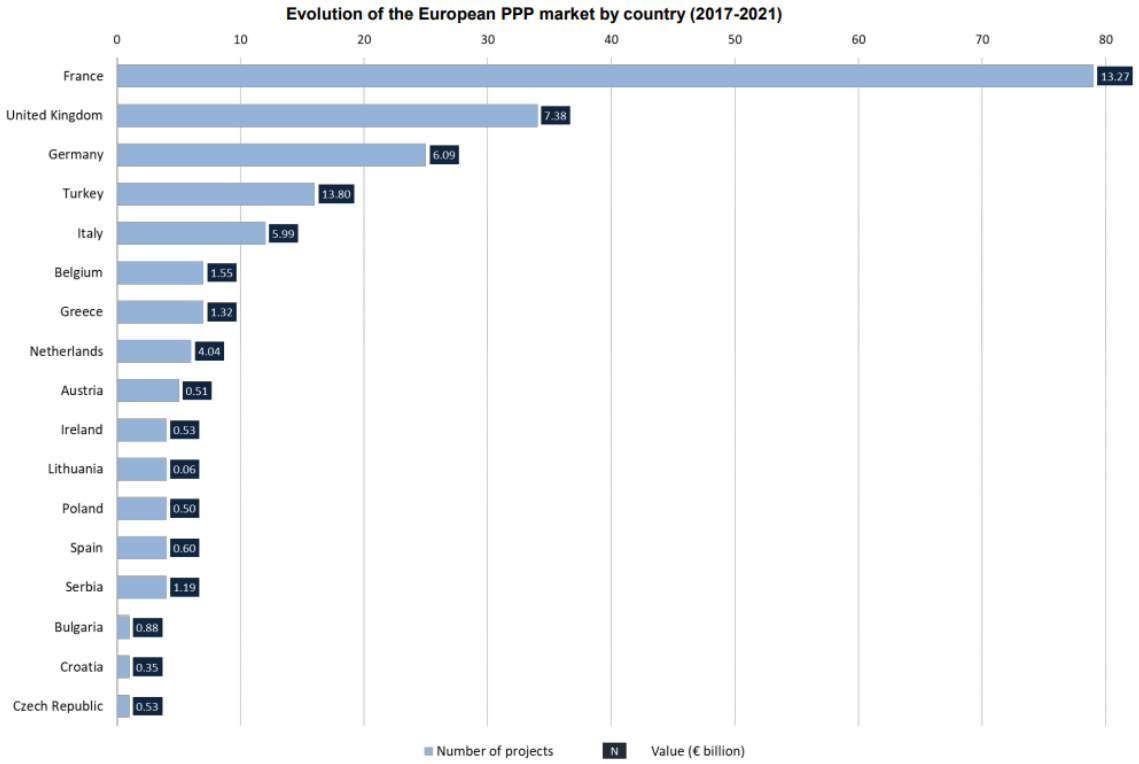

Figure 13: *Evolution of the European PPP market by country (2017-2021).*

Source: *EIB, 2022*

In connection with the latter consideration, it is pointed out that some macroeconomic variables may have an important impact in the future development of the Italian PPP market. Among them, a key role is played by the investments envisaged in the Piano Nazionale di Ripresa e Resilienza (PNRR). More in detail, the PNRR explicitly points to project financing as a suitable tool for the recovery of Italy. The PPP is referred to by the PNRR in terms of a catalyst for private financial resources, additional to those allocated by the European Union, to ensure the achievement of the Plan's objectives. In fact, by allocating some of the resources contained in the PNRR to PPP operations, each project financed by the PNRR could, thanks to private investment, have a sort of multiplier effect for the recovery. On the other hand, it should be noted that other variables could instead represent a slowing factor for the development of this market. The delicate economic situation that many countries (including Italy) are facing is characterized by a high inflationary rate, which clearly has an impact on the financial equilibrium of the business plans of several PPP projects. Notwithstanding, it is clear that there is still ample room for development for the PPP market in Italy.

In conclusion, PPP is a market which has been deeply affected by the COVID 19 pandemic, but which can show a good potential for further development due to the many advantages which can arise from Public-Private collaborations. The European market has reached a good degree of maturity in certain areas (e.g. Transportation), while in others (e.g. Healthcare) there is ample room for growth. Focusing on Italy, it can be inferred that the PPP market does not seem to be fully developed yet, especially in comparison with other markets in major European countries. As already mentioned, this can be traced back to a number of challenges and several macroeconomic factors should be considered. However, the study conducted by DIPE points out that, leaving apart the impact of major economic indicators (e.g. inflation, etc.), one of the main disincentives to private investment in Italy seems to lie in the uncertainty and excessive length of the authorization and administrative processes (DIPE, 2022). Thus, the following chapters of this research will try to address more in detail this specific topic.

3. RESEARCH METHODOLOGY

This chapter is dedicated to exposing the approach adopted during the research activity, which represent a consistent part of the effort spent in the development of this Thesis.

After a brief overview of the main players and stakeholders in place, the main issues addressed by the research and the Thesis objectives are presented. The research methodology is finally detailed in the last sub-chapter.

3.1 Overview

With a Decision of the Regional Council (DGR 22/11/2019, n. 17-547), Regione Piemonte has established that PPP proposals in the healthcare sector must be evaluated on their economic sustainability and on their consistency with the regional health planning policies (e.g. “Programma Triennale”), by binding opinion of the “Direzione Sanità”.

To this end, the “Direzione Sanità” is empowered to define the procedure for evaluating in their economic and financial contents new projects in the healthcare sector delivered through Public Private Partnership contracts. This task is accomplished thanks to the cooperation with IRES Piemonte. IRES Piemonte is an instrumental body of the Regione Piemonte, which is encharged of establishing a Technical Working Group (“Gruppo di Lavoro Tecnico” or “GLT”) to whom to entrust the evaluation of the appropriateness and correctness of PPP intervention proposals from the legal, technical, economic-financial and organizational points of view. New proposals concerning PPP initiatives are in fact transmitted by the Regional Health Authorities under the “Direzione Sanità” to IRES.

IRES has identified – within Regional Public institutions, with a preference for those operating in the world of university research – experienced professionals, who constitute the “GLT”, and are competent in different areas: legal, technical, economic and financial and Health Technology Assessment. The “GLT” as a whole has the task of assessing the appropriateness and fairness of PPP solutions proposed.

As already mentioned in the chapter 1.3.3, the "GLT" plays a key role in the Private Initiative PPP process, formulating its opinion on the PPP proposal under analysis, which may include a request for further modifications to be delivered to the Private Party.

3.2 Problem statement and research objectives

This research paper stems from a need faced by IRES that, while conducting its consultancy activity for the Regione Piemonte institution, has noticed a strong heterogeneity in the content of PPP proposals (on private initiative) submitted to the region and developed through a PF scheme.

In fact, the heterogeneity of proposals not only makes the IRES assessment process more challenging and demanding, but ends up in slowing down the entire PPP project procurement procedure, with the establishment of a negative externality for the society as a whole.

Therefore, the research objectives are, on the one hand, to develop a standard set of guidelines for private initiative PPPs in the Healthcare sector proposed to Regione Piemonte and, on the other hand, to expand the general knowledge on PPPs in order to facilitate and speed up the recourse by private entrepreneurs to such projects.

The research perimeter will be limited to the economic and financial aspects of PPP project proposals, and to any relevant implication which may impact those fields.

3.3 Methodology

The research study included in this paper has been conducted in close collaboration with Prof. Alberto De Marco. In fact, Prof. Alberto De Marco has been appointed as one of the experienced professionals constituting the "GLT", having an expertise on the economic and financial evaluation of PPP initiatives.

The research has been conducted analysing six different PPP projects on private initiative (as per Art. 183 comma 15 of the "Codice dei Contratti Pubblici") in the Healthcare sector ("Case Studies"), which have been proposed to Regione Piemonte and subsequently evaluated by IRES over last years.

Each case study has been analysed taking into consideration all the relevant official documentation (Draft Contract, PEF, etc.), in order to identify main critical points and major issues in the structure of the proposal.

Further investigations have been carried out for case study 1 "Cuneo Hospital", as it represents the more structured and complex PPP initiative among those analysed, and involves a substantial investment of resources. This has been considered as the "leading case", and will be used as an example for the presentation of the guideline proposed in this paper.

The outcomes of the case study analysis are represented and summarized in the following chapter. Chapter 5, instead, will be dedicated to the development of the guideline, while closing remarks and conclusions of the research are addressed in chapter 6.

Parallel to the development of the guidelines, it has also been arranged a dedicated excel template in order to support the public party in the evaluation of PPP proposals, which can be found as an annex of this research work.

4. CASE STUDY ANALYSIS

This chapter is dedicated to the analysis of six different PPP projects, presented by private firms/entrepreneurs to Regione Piemonte over the time period 2020 – 2022.

As already highlighted, for each of the cases presented, the analysis has been conducted taking the perspective of Public Administraton advisors (the "GLT"), with a focus on the Economic and Financial aspects of the deal. With reference to those fields, the Public Administraton is concerned in ensuring that a PPP project:

- Is able to deliver VfM;
- has all formal requirements (as per chapter 1.4.3.1) for its Off-balance recording;
- is proposed under adequate price conditions (i.e. IRR);
- is characterized by proper economic indicators (i.e. DSCR), that ensure its bankability and facilitate the subsequent financial closing.

These case studies have been selected because they represent different types of PPPs and thus allow a more complete representation of possible initiatives that the regional administration might have to evaluate. The analysis of these projects enabled and supported the proposal of the guideline presented in chapter 5.

4.1 Case 1 – Cuneo Hospital

4.1.1 INTRODUCTION

“Cuneo Hospital” is a PPP project delivered through a project finance scheme, on private initiative. It involves the activation of a Public-Private Partnership through a private proposal pursuant to the provisions of art. 183, paragraph 15 of d. Lgs. N. 50/2016.

Functions transferred to the private party are the executive design, the execution of construction works, the financing as well as the ordinary and extraordinary maintenance - for a period of 25 years - of the new Hospital in the area owned by the Local Health Authority “S. Croce e Carle” located in Confreria (CN).

Specifically, the area identified encompasses the entire Carle Hospital complex, which is to be demolished to make room for the new single pole, with the exception of part of the historic building (Block A from 1930), the two structures that define the entrance and the associated green area, including the driveway.

The Project proposal includes the provision of a new public cable car connecting the center of Cuneo with the new Hospital complex. The design envisions a single-span structure with a total length of 1,200 meters. Visitors from the city will be able to take advantage of this service through the descent-ascent station planned adjacent to the old city hospital S.Croce. This solution accomplishes a twofold objective: first, it will significantly reduce the vehicular transportation of visitors approaching the new hospital; In addition, the work will directly connect the newly built health care area with the Santa Croce hospital district, which will continue to accommodate medical functions.

“Cuneo Hospital” project is characterized by the following time schedule:

- 1 year and 6 months for Design;
- 3 years and 6 months for Construction and Test (from month 18 to month 60);
- 25 years as “concession period”, starting once Test phase is completed.

4.1.2 PEF ANALYSIS

The project involves an overall investment (Capex) of 369.391.000 €

Cost Item	Amount (€)
A. Construction	345.201.000
B. Design	11.411.000
C. “Somme a Disposizione”*	12.778.000
D. Capex (A+B+C)	369.391.000

Table 8: *Capex composition – Cuneo Hospital*

*= Expenses for proposal preparation, testing, legal publication, etc..

Taking into account the cash flow analysis, the resulting financial need is of 435.114.000 €.

The financial need will be covered with a Debt/Equity ratio of 70:30. Senior Debt will be reimbursed over 17 years (reimbursement starts with the concession period) with an applied interest rate of 4.83%, granting a post-tax DSCR of 1.4. Interest rate has been computed using a spread of 2,90% over the 15 years IRS rate.

The initiative provides for a price contribution granted by the Public Administration to the Private Party totaling € 121.9 million, which will cover 33% of total investment (in line with the normative threshold of 49% as per art. 180, paragraph 6 of d. Lgs. N. 50/2016).

The remaining portion of financing is provided with equity contribution. Of this, approximately 24 million are granted as shareholder financing (which is subordinated to debt financing, but takes priority on pure equity contribution), and 60.989 million as pure equity contribution.

The Cost of Equity (Ce) has been correctly computed with the CAPM model and is equal to 7,79%, with a resulting project WACC of 6.28%.

After the testing (i.e. starting from 2028), each year the public body will pay to the private party:

- A fixed "Investment fee" for the use of the infrastructure;
- a "Maintenance fee" for ordinary and extraordinary maintenance works carried out by the private, including the cable car. Maintenance fee will be revised annually according to changes in labor and material costs;
- an “Energy fee”, related to the provision of thermal energy, electricity and the supply of water, including the cable car (e.g. the electricity fee is determined on the basis of a unit cost expressed in €/kWhe multiplied by the quantities that will be measured and inferred from the

energy meters installed). It is subject to an annual revision by the parties, based on the actual price of energy.

The "lease fee" is computed according to a financial amortization plan referred to the repayment of the senior Debt at the abovementioned financial conditions.

The "maintenance fee" shall be paid by the Public Administration upon the full availability of the infrastructure and the ascertained compliance with the expected maintenance standards, in accordance with the key performance indicators (KPIs) which have been contractually agreed.

For the purpose of financial modelling, "Energy" and "Maintenance" fee are inflated at the annual inflation rate of 1.7%.

Revenue Source	Amount
"Investment fee"	22.700.000,00 €
"Maintenance fee" – year 1 (2028)	8.265.000 €
"Energy fee" – year 1 (2028)	13.068.000 €
Total	44.033.000 €

Table 9: *Revenue sources – Cuneo Hospital*

Additionally to the previous fees, granted from the Public Administration to the Private Entity, the Private Party can also rely on revenues coming from commercial activities. These mainly refer to the management of paid parking lots and commercial areas, and they are also inflated at the annual inflation rate of 1.7% for the purpose of financial modelling.

Revenue Source	Amount
Annual revenues - commercial areas – Year 1 (2028)	156.000 €
Annual revenues – parking lots – Year 1 (2028)	1.500.000 €

Table 10: *Revenues from commercial activities – Cuneo Hospital*

The total annual revenues for year 1 (2028) are 45,689,000 €.

The overall fee has been set taking into account operating costs (O&M, energy, general and SPV administrative costs, etc.) faced by the Private Party over the entire concession period. The resulting financial model grant the following profitability to the Private Party:

Project IRR	6.49%
Project NPV	4.796 €
Equity IRR	8.05%
Avg. post-tax DSCR	1.4
Min. post-tax DSCR	1.4

Table 11: *Main financial indicators – Cuneo Hospital*

This project is somehow in between the other case studies presented in this paper. In fact, on the one hand, it has some typical features which can reconduct it to the BLMT ("Locazione Finanziaria") contract, as highlighted by the fixed "investment fee" which the Public Administration has to pay to the private party each year. On the other hand, differently from a BLMT agreement, this initiative entails also the transfer of demand risk to the private party, which is in charge of several non-sanitary services such as parking slots, bars, etc. Moreover, differently from a typical BLMT contract, there is a substantial equity contribution.

PPP Type	**Year of Submission of the Proposal**	**Capex (Investment)**	**Duration (Concession Period)**
PPP through Project Finance	2022	369.391.000	25 Years

Table 12: *Main project features – Cuneo Hospital*

4.1.3 MAIN CRITICALITIES IDENTIFIED

Several confidential documents concerning the initial private proposal have been consulted in order to properly analyse this project initiative (see "Exhibits"). This has allowed a better comprehension of the project, which has led to the identification of the following main criticalities:

- The interest rate applied to the "shareholder financing" is of 8%. This value seems unreasonably high (higher than Ce, equal to 7.79%). Moreover, the Private Entity has not

reported any justification for this value. It would be recommended to show the ratio behind such choice or, alternatively, re-align it to proper market values.

- Several issues arise in the risk matrix. Firstly, the raw material risk (defined as the risk of unexpected cost increases in raw materials and/or resources or inadequacy or unavailability of those planned), is an occurrence which can be better managed by the private entity, as it is the party which is in charge of appointing suppliers and has a deeper experience in construction. Moreover, having this shift in raw material risk allocation will allow the PA to properly transfer construction risk to the private entity.

  Secondly, force majeure risk should also be in part transferred to the private party. The reference is to the article 16.4 of the Draft Contract ("Bozza di Convenzione"), which states that a minimum rent is granted to the private party even in lack of the availability of the infrastructure due to a force majeure event, in order to cover the senior debt installments. This is a clause which really limit the transfer of the operational risk to the private party, therefore limiting its classification as an off-balance operation.

  Having these adjustments performed, then the entire contract would gain all the requirements to be recorded as as an Off-Balance operation.
- The risk matrix does not report a quantitative evaluation of transferred risks. As a result, the PSC analysis, which is a fundamental tool in order for the Public Administration to evaluate the convenience of pursuing the initiative on a PPP form with respect to the traditional procurement procedure, is not developed.

4.1.4 EXHIBITS

For the development of the analysis of this case study, the following official and confidential documentation has been consulted:

- Feasibility Study;
- Draft Contract;
- Business Plan ("PEF");
- Risk Matrix;
- "Specifiche Servizi";
- Financial Plan (Excel file);
- Quadro Economico.

4.2 Case 2 - Alba Casa Salute

4.2.1 INTRODUCTION

"Alba Casa Salute" is a BLMT ("Locazione Finanziaria") project delivered through a project finance scheme, on private initiative. It involves the activation of a Public-Private Partnership through a private proposal pursuant to the combined provisions of art. 183, paragraph 16 and 187 of d. Lgs. N. 50/2016. Functions transferred to the private party are the executive design (with the acquisition of the final project during the offer), the execution of construction works, the financing as well as the ordinary and extraordinary maintenance - for a period of 20 years - of a Health Home in the area owned by the Local Health Authority CN 2 Alba Bra located in Via Pietrino Belli, 26 in Alba (CN).

As mentioned, through BLMT projects, the private party grants the Public Administration the use of a real estate asset upon payment (by the public entity) of a periodic rent for a specified number of years ("lease period"). At the end of the lease period, the public entity has the right to acquire ownership of the same asset by paying a redemption fee of a predetermined amount. BLMT can be an alternative to the concession instrument, especially when the management aspect is absent or marginal, or for which it is more complex to envisage the direct provision of services at the private expense.

"Alba Casa Salute" project is characterized by the following time schedule:

- 2 months for Design;
- 1 year and 2 months for Construction and Test;
- 20 years as "lease period", starting once Test phase is completed.

The private party is an SPV ("ATI") established between the following players:

- CO.GE.FA S.p.a., acting as Group leader company, in charge of Design & Construction;
- ENPOWER S.r.l., in charge of Maintenance & Construction;
- ICCREA BANCAIMPRESA S.p.A, in charge of Financing.

4.2.2 PEF ANALYSIS

The project involves an overall investment (Capex) of 11.666.676,89 €, to which a total of 800.000 € for maintenance expenses must be added.

Cost Item	**Amount (€)**
A. Construction	9.700.000
B. Design	830.960
C. “Somme a Disposizione”*	1.135.716,89
D. Capex (A+B+C)	11.666.676,89
E. Ordinary & Extraordinary Maintenance Overall Cost (sum over 20 years)	800.000

Table 13: *Capex composition – Alba Casa Salute*

*= Expenses for proposal preparation, testing, legal publication, etc..

In this project there are no contributions in equity, as the Capex is entirely financed by Debt. This is a typical setting in a BLMT agreement.

After the testing, each year the public body will pay to the private party a "lease fee" for the use of the infrastructure and a "maintenance fee" for ordinary and extraordinary maintenance works carried out by the private.

The “lease fee” is computed according to a financial amortization plan which sets debt repayment over 20 years in equal installments, which have been computed using a spread of 3,90% over the IRS 20Y, and are indexed each year to this base rate.

The “maintenance fee” shall be paid by the Public Administration upon the full availability of the infrastructure and the ascertained compliance with the expected maintenance standards, in accordance with the key performance indicators (KPIs) which have been contractually agreed.

Lease fee	539.957,00 €

Maintenance fee – years 1-5	25.000 €
Maintenance fee – years 6-10	35.000 €
Maintenance fee – years 11-15	45.000 €

Maintenance fee – years 16-20	55.000 €

Table 14: *Maintenance and lease fee- Alba Casa Salute*

PPP Type	**Year of Submission of the Proposal**	**Capex (Investment)**	**Duration ("lease period")**
BLMT ("Locazione Finanziaria")	2021	11.666.676,89 €	20 years

Table 15: *Main project features - Alba Casa Salute*

4.2.3 MAIN CRITICALITIES IDENTIFIED

Several confidential documents concerning the initial private proposal have been consulted in order to properly analyse this project initiative (see "Exhibits"). This has allowed a better comprehension of the project, which has led to the identification of the following main criticality:

- A PSC calculation is reported in the documentation presented to IRES. However, the value of transferred risks is computed using the traditional standard tables developed by ANAC, as mentioned in ch.1 ("VALUE FOR MONEY ASSESSMENT THROUGH THE PSC METHODOLOGY") of this paper. Using standard tables and figures, not accounting for project-specific features, constitutes a simplification and could lead to a final PSC which may be far from reality. In this sense, it would be advisable to include in the risk matrix a quantitative evaluation of transferred risks. This could allow for a more robust approach to PSC analysis, which can lead to a better estimation of the VfM, as it will be shown in chapt. 5 of this paper.

4.2.4 EXHIBITS

For the development of the analysis of this case study, the following official and confidential documentation has been consulted:

- Sintesi Giuridico-Economica
- Risk Matrix
- Draft Contract (Schema di Convenzione)
- Amortization schedule ("Piano di Ammortamento Finanziario" – PAF)
- Specificazione delle Caratteristiche del Servizio e della Manutenzione

- PSC Analysis (“Analisi della Fattibilità Finanziaria – AFF)
- Impegno a Costituirsi in Associazione Temporanea di Imprese (ATI)

4.3 Case 3 - Bra Casa Salute

This case is structurally very close to Case Study 2 “Alba Casa Salute” and, therefore, many comments and conclusions resemble the ones already highlighted in the previous chapter.

4.3.1 INTRODUCTION

“Bra Casa Salute” is a BLMT (“Locazione Finanziaria”) project delivered through a project finance scheme, on private initiative. It involves the activation of a Public-Private Partnership through a private proposal pursuant to the combined provisions of art. 183, paragraph 16 and 187 of d. Lgs. N. 50/2016. Functions transferred to the private party are the executive design (with the acquisition of the final project during the offer), the execution of construction works, the financing as well as the ordinary and extraordinary maintenance - for a period of 20 years - of a Health Home in the area owned by the Local Health Authority CN 2 located in Via Via Vittorio Emanuele II, 3 in Bra (CN).

“Bra Casa Salute” project is characterized by the following time schedule:

- 2 months for Design;
- 1 year and 2 months for Construction and Test;
- 20 years as “lease period”, starting once Test phase is completed.

The private party is an SPV (“ATI”) established between the following players:

- Cooperativa Edile Appenino SOC. COOP. A R.L, acting as Group leader company, in charge of Construction & Maintenance;
- ESI.PRO s.r.l., in charge of Design;
- ENPOWER s.r.l., in charge of Maintenance & Construction;
- ICCREA BANCAIMPRESA S.p.a, in charge of Financing.

4.3.2 PEF ANALYSIS

The project involves an overall investment (Capex) of 9.999.261,13 €, to which a total of 1.200.000,00 € for maintenance expenses must be added.

Cost Item	**Amount (€)**

A. Construction	8.425.000,00
B. Design	740.055,68
C. “Somme a Disposizione”*	834.205,45
D. Capex (A+B+C)	9.999.261,13
E. Ordinary & Extraordinary Maintenance Overall Cost (sum over 20 years)	1.200.000,00

Table 16: *Capex composition -Bra Casa Salute*

*= Expenses for proposal preparation, testing, legal publication, etc..

In this project there are no contributions in equity, as the Capex is entirely financed by Debt. This is a typical setting in a BLMT agreement.

After the testing, each year the public body will pay to the private party a "lease fee" for the use of the infrastructure and a "maintenance fee" for ordinary and extraordinary maintenance works carried out by the private.

The “lease fee” is computed according to a financial amortization plan which sets debt repayment over 20 years in equal installments, which have been computed using a spread of 3,80% over the 6 months EURIBOR rate, and are indexed each year to this base rate.

The “maintenance fee” shall be paid by the Public Administration upon the full availability of the infrastructure and the ascertained compliance with the expected maintenance standards, in accordance with the key performance indicators (KPIs) which have been contractually agreed.

Lease fee	663.304,45 €

Maintenance fee – years 1-5	40.000 €
Maintenance fee – years 6-10	50.000 €
Maintenance fee – years 11-15	70.000 €
Maintenance fee – years 16-20	80.000 €

Table 17: *Maintenance fee – Bra Casa Salute*

PPP Type	Year of Submission of the Proposal	Capex (Investment)	Duration ("lease period")
BLMT ("Locazione Finanziaria")	2021	9.999.261,13 €	20 years

Table 18: *Main project features - Bra Casa Salute*

4.3.3 MAIN CRITICALITIES IDENTIFIED

Several confidential documents concerning the initial private proposal have been consulted in order to properly analyse this project initiative (see "Exhibits"). This has allowed a better comprehension of the project, which has led to the identification of the following main criticalities:

- The risk matrix lacks a description of the risks identified, which would allow a more correct identification of the risks involved;
- Making reference to ANAC guidelines, several risks under the "Other Risks" category (Cf. Chaper 1.4.3. "Risk Allocation") have not been included in the proposed risk matrix. These includes, for instance, legislative risk, financing risk, industrial relations risk, residual value risk, which may be relevant for the proposed initiative.
- A PSC calculation is reported in the documentation presented to IRES. However, the value of transferred risks is computed using the traditional standard tables developed by ANAC, as mentioned in ch.1 ("VALUE FOR MONEY ASSESSMENT THROUGH THE PSC METHODOLOGY") of this paper. Using standard tables and figures, not accounting for project-specific features, constitutes a simplification and could lead to a final PSC which may be far from reality. In this sense, it would be advisable to include in the risk matrix a quantitative evaluation of transferred risks. This could allow for a more robust approach to PSC analysis, which can lead to a better estimation of the VfM, as it will be shown in chapt. 5 of this paper.

4.3.4 EXHIBITS

For the development of the analysis of this case study, the following official and confidential documentation has been consulted:

- Sintesi giuridico-economica
- Risk Matrix

- Business Plan (“Quadro Economico”)
- Draft Contract (“Bozza di Convenzione”)
- Amortization schedule (“Piano di Ammortamento Finanziario” – PAF)
- Specificazione delle Caratteristiche del Servizio e della Manutenzione
- PSC Analysis (“Analisi della Fattibilità Finanziaria – AFF)
- Impegno a Costituirsi in Associazione Temporanea di Imprese (ATI)

4.4 Case 4 - Epc Asl Alessandria

4.4.1 INTRODUCTION

"EPC ASL ALESSANDRIA" is a O&M (EPC) contract delivered through a project finance scheme, on private initiative. It involves the activation of a Public-Private Partnership through a private proposal pursuant to the art. 183, paragraph 16 of d. Lgs. N. 50/2016.

An EPC is a contractual agreement between the beneficiary and the supplier of an energy efficiency improvement, verified and monitored throughout the life of the contract, in which payments are made according to the contractually established level of efficiency enhancement. Essentially, the EPC contract requires the ESCo (i.e., the provider) to carry out energy efficiency upgrades and improvements on facilities and buildings owned by the client (beneficiary). The investment, therefore, will be borne by the ESCo (the Public Administration, however, maintain the property of infrastructure). The Public party, on the other hand, will pay an annual fee to remunerate for the investment and for the operations & maintenance services, and he will pay also for the energy consumption. This latter part of the fee is linked to a contractually established level of performance: should energy consumption exceed this level, not only will the Public Administration owe nothing beyond the predetermined amount, but the Esco will also be subject to additional penalties. EPC falls within PPP contract definition, as clearly indicated by Art. 180, paragraph 2 of d. Lgs. N. 50/2016.

Within "EPC ASL ALESSANDRIA" project, the functions transferred to the private party are the executive design, the execution of construction works, the financing as well as the ordinary and extraordinary maintenance - for a period of 14 years – in order to deliver several energy efficiency upgrades to facilities and equipment owned by the ASL Alessandria. Included among the foreseen energy efficiency improvement are interventions such as the installation of new heat generators, the installation of thermostatic valves, the replacement of windows and doors, and the installation of LED lamps. Private party will be also in charge of services like the supply of energy carriers, the maintenance of the equipment and installations, the energy consumption monitoring, and for any emergency response.

"EPC ASL ALESSANDRIA" project is characterized by the following time schedule:

- Phase 1 (first year): Design;
- Phase 2 (second year): Construction and Maintenance activities carried out;

- Phase 3 (years 2-15): full-scale management of facilities under concession (supply of energy carriers, maintenance, energy consumption monitoring, emergency response).

The private party is an SPV ("ATI") established between the following players:

- SIRAM S.p.A., acting as Group leader company;
- RENZI ALBERTO S.r.l.

4.4.2 PEF ANALYSIS

The project involves an overall investment (Capex) of 10.248.827,56 €

Cost Item	**Amount (€)**
A. Construction	9.235.412
B. Design	434.151
C. "Somme a Disposizione"	579.265
D. Capex (A+B+C)	10.248.827,56

Table 19: *Capex composition - EPC ASL Alessandria*

Taking into account the cash flow analysis, the resulting financial need is of 11.196.399 €.

The financial need will be covered with a Debt/Equity ratio of 70:30. Senior Debt will be reimbursed over 10 years, with an applied interest rate of 3.13%, granting a post-tax DSCR of 1.3.

After the phase 2 (second year), each year the public body will pay to the private party:

- A fixed "investment fee" for Capex reimbursement;
- A "maintenance fee" which shall be paid by the Public Administration upon the full availability of the infrastructure and the ascertained compliance with the expected maintenance standards. Any failure to meet such standards is punished through the application of contractually agreed penalties. Maintenance fee will be revised annually according to changes in labor and material costs;
- A "thermal energy service fee": this fee is linked to the contractually established level of performance: should thermal energy consumption exceed this level, not only will the Public Administration owe nothing beyond the predetermined amount, but the Esco will also be

subject to additional penalties. Thermal Energy Service fees will be revised annually according to changes in the unit prices of the energy carriers;

- An "electricity service fee": this fee is linked to the contractually established level of performance: should energy consumption exceed this level, not only will the Public Administration owe nothing beyond the predetermined amount, but the Esco will also be subject to additional penalties. Electricity Service Fees will be revised annually according to changes in the unit prices of the energy carriers.

Revenue source	Phase 1 (year 1)	Phase 2 (year 2)	Phase 3 (years 2-15)
Investment fee	-	-	960.039
Maintenance fee	1.437.718	1.661.322	1.661.322*
Thermal energy service fee	-	794.142	839.578*
Electricity service fee	-	3.698.049	2.954.854*
TOTAL	1.437.718	6.153.512	6.415.793

Table 20: *Revenue sources - EPC ASL Alessandria*

**= for the purpose of financial model development, a constant annual fee adjustment rate of 1.2 percent is assumed.*

The overall fee has been set taking into account operating costs faced by the Esco over the entire concession period, in order to grant to the private party the following profitability:

Project IRR	6.67%
Project NPV	43.332 €
Equity IRR	9.07%
Equity NPV	192 €
Avg. post-tax DSCR	1.3
Min. post-tax DSCR	1.3

Table 21*: Main financial indicators - EPC ASL Alessandria*

PPP Type	Year of Submission of the Proposal	Capex (Investment)	Duration
O&M (EPC contract)	2020	10.248.827,56 €	16 years

Table 22: *Main project features - EPC ASL Alessandria*

4.4.3 MAIN CRITICALITIES IDENTIFIED

Several confidential documents concerning the initial private proposal have been consulted in order to properly analyse this project initiative (see "Exhibits"). This has allowed a better comprehension of the project, which has led to the identification of the following main criticalities:

- The availability risk cannot be considered as completely transferred to the Private Party. In fact, it is stated in the contract that the Public Administration will have to dedicate some staff to the maintenance of the service offered by the Concessionaire.
- It should be highlighted that the average post-tax DSCR of 1.3 can be considered slightly low and may require a reduction in leverage at the actual loan agreement, with impact on the equity profitability;
- The PEF contains several elements that can lead to a higher level of profitability than the opportunity cost of the initiative.

  As a first remark, the interest rate on debt capital of 3.13% appears to be overestimated in relation to the reference conditions of financial markets (2020). Fair values could be around 2.4/2.6 percent where current EURIRS levels are in the 0.1-0.5 percent range. Such values could still considerably reward project and entrepreneurial risk.

  Secondly, the reported cost of equity (Ce) of 9.07% can be considered as quite high. Most importantly, the Private Party omits to explain the factors and reasons behind this equity cost. It would be desirable to give evidence of this by applying, for example, the Capital Asset Pricing Model method.

  Moreover, the WACC does not seem to be correctly computed. In fact, taking as input data:

  - Ce = 9.07%
  - Cd = 3.13%
  - Taxation rate = 22%

  And using the WACC formula, the resulting weighted average cost of capital should be of 4.3%. Instead, in the PEF presented to Regione Piemonte, it is clearly reported a WACC of

6.60%, which lead to an over-estimation of the cost of capital with a consequent extra-profitability level for the Esco. The project IRR should be aligned to this profitability level.

5. The sum of the Present Value of the cash flow from 14 years of estimated savings and the estimate of the risks borne by the Public Party, as highlighted in an ad-hoc report, allows estimating the cost-effectiveness of the Project compared to today's management. The proposal, however, lacks a proper PSC analysis, where the PPP project is compared with pursuing the same initiative using the traditional procurement approach. This could be reached by including in the risk matrix a quantitative evaluation of transferred risks, allowing for a sound approach to PSC analysis, as it will be shown in chapt. 5 of this paper.

4.4.4 EXHIBITS

For the development of the analysis of this case study, the following official and confidential documentation has been consulted:

- Relazione Illustrativva Generale
- Calcolo sommario della spesa
- Cronoprogramma dei lavori
- Progetto di Gestione (Feasibility Study)
- All. Piano di Misura & Verifica
- Risk Matrix
- Business Plan (PEF)
- Draft Contract (“Bozza di Convenzione”)
- Criteri di Adeguamento e Revisione del Canone
- Impegno a Costituirsi in Associazione Temporanea di Imprese (ATI)

4.5 Case 5 - Servizio Radiodiagnostica Asl Alessandria

4.5.1 INTRODUCTION

"SERVIZIO RADIODIAGNOSTICA ASL ALESSANDRIA" is a brownfield, O&M contract delivered on private initiative. It involves the activation of a Public-Private Partnership pursuant to the combined provisions of art. 180, paragraph 8 and art. 183, paragraph 16 of d. Lgs. N. 50/2016.

The object of the concession – which spans over 10 years - is the provision of new high-tech radiological systems, including the equipment installation, the full-risk ordinary maintenance service, the management service to the MRI, mammography screening, CT and RX service and the staff training. It is also included, at the expense of the Private Party, the removal and disposal of equipment currently used by the ASL ALESSANDRIA.

"SERVIZIO RADIODIAGNOSTICA ASL ALESSANDRIA" project is characterized by the following time schedule:

- 1 year for Design & Equipment Installation;
- 10 years as concession period. During the first year (where new systems Design and Installation are carried out) the services will be provided using the old radiological system.

The private party is an SPV ("ATI") established between the following players:

- Althea s.p.a., acting as Group leader company;
- 3B s.r.l. e Centro Radiologico Polispecialistico di Ternate;

4.5.2 PEF ANALYSIS

The project involves an overall investment (Capex) of 9.812.567 €.

Cost Item	**Amount (€)**
A. Design and Plants Renovation	1.220.000,00
B. Equipment	8.056.270
C. SPV creation	305.000

D. Expenses incurred in the preparation of the proposal	231.297
E. Capex (A+B+C+D)	9.812.567

Table 23: *Capex composition - Servizio Radiodiagnostica ASL Alessandria*

The financial, which coincides with Capex in this case, will be covered with a Debt/Equity ratio of 52:48. Senior Debt will be reimbursed over 10 years, with an applied interest rate of 3.50%, granting an average post-tax DSCR of 1.48.

In this initiative, the Private Party is entitled to receive from the Public Administration a fee based on the number of diagnostic services actually performed. The Private Party own the new equipment, which will be transferred to the Public Authority at the end of the concession.

The Private Party has estimated the following figures in order to develop the financial plan:

Diagnostic Service	Number of services/year	€/single service
RX	10.000	7,00
Screening Mammo	12.000	50,00
TC	10.000	40,00
RM	24.000	149,00

Table 24*: Planned volumes and tariffs applied for diagnostic services - Servizio Radiodiagnostica ASL Alessandria*

Diagnostic Service	Yearly Revenues
RX	70.000
Screening Mammo	600.000
TC	400.000
RM	3.576.000
Total	**4.646.000**

Table 25: *Expected revenues from diagnostic services - Servizio Radiodiagnostica ASL Alessandria*

Yearly revenues will cover operating and labour cost, and will serve as well for debt repayment.

According to the financial planning carried out, and taking into account a WACC of 4,78% and a Ce of 7,11%, the Private Party foresees the following profitability:

Project IRR	5.08%
Project NPV	114.405 €
Equity IRR	7.11%
Equity NPV	0 €
Avg. post-tax DSCR	1.48
Min. post-tax DSCR	1.34

Table 26: *Main financia indicators - Servizio Radiodiagnostica ASL Alessandria*

PPP Type	**Year of Submission of the Proposal**	**Capex (Investment)**	**Duration**
O&M ("Concessione di Servizi")	2020	9.812.567 €	10 years

Table 27: *Main project features - Servizio Radiodiagnostica ASL Alessandria*

4.5.3 MAIN CRITICALITIES IDENTIFIED

Several confidential documents concerning the initial private proposal have been consulted in order to properly analyse this project initiative (see "Exhibits"). This has allowed a better comprehension of the project, which has led to the identification of the following main criticalities:

- The interest rate on debt capital of 3.50% appears to be overestimated in relation to the reference conditions of financial markets (2020). Fair values of applied spread could be around 2.4/2.6 percent where current EURIRS levels are in the 0.1-0.5 percent range. Such values could still considerably reward project and entrepreneurial risk.
- The demand risk cannot be considered as completely transferred to the Private Party. The demand risk is in fact borne also by the Concessionaire, which takes on, within certain limits, the variability of market demand through automatic mechanisms of tariff increases. As a

consequence of this and of the previous point, the initiative does not assume the right characteristics to be recorded off balance sheet.

It will therefore be desirable to transfer demand risk to the Private Party decoupling the change in tariffs from the volumes of services provided.

6. As highlighted in an ad-hoc report, the increased efficiency in the equipment can potentially lead to a reduction in waiting lists, with a resulting increase in demand. The sum of the Present Value of benefits produced and the estimate of the risks borne by the Public Party, allows estimating the cost-effectiveness of the Project compared to today's management. The proposal, however, lacks a proper PSC analysis, where the PPP project is compared with pursuing the same initiative using the traditional procurement approach. This could be reached by including in the risk matrix a quantitative evaluation of transferred risks, allowing for a sound approach to PSC analysis, as it will be shown in chapt. 5 of this paper.

4.5.4 EXHIBITS

For the development of the analysis of this case study, the following official and confidential documentation has been consulted:

- Draft Contract ("Bozza di Convenzione")
- Cronoprogramma dei lavori
- All. Volumi Tariffe e Fatturazione
- All. Penali
- Risk Matrix
- Business Plan (PEF)
- Delibera 545 del 13/08/2020 – ASL AL

4.6 Case 6 - Padiglione G “Birago Di Vische”, Amedeo Di Savoia Asl Torino

4.6.1 INTRODUCTION

“Padiglione G “Birago Di Vische”, Amedeo Di Savoia Asl Torino” is a BLMT (“Locazione Finanziaria”) project delivered through a project finance scheme, on private initiative. It involves the activation of a Public-Private Partnership through a private proposal pursuant to the combined provisions of art. 183, paragraph 16 and 187 of d. Lgs. N. 50/2016. Functions transferred to the private party are the executive design (with the acquisition of the final project during the offer), the execution of construction works, the financing as well as the ordinary and extraordinary maintenance - for a period of 20 years - of the hospital pavilion G “Birago di Vische”, part of the hospital district “Amedeo di Savoia” in the area owned by the Local Health Authority of Turin located in Corso Svizzera 164 in Turin.

As mentioned, through BLMT projects, the private party grants the Public Administration the use of a real estate asset upon payment (by the public entity) of a periodic rent for a specified number of years (“lease period”). At the end of the lease period, the public entity has the right to acquire ownership of the same asset by paying a redemption fee of a predetermined amount. BLMT can be an alternative to the concession instrument, especially when the management aspect is absent or marginal, or for which it is more complex to envisage the direct provision of services at the private expense.

The purpose of the intervention is to build an hospital ward for infectious or immunocompromised patients, with 28 ordinary and 10 semi-intensive care beds, as well as a TAC diagnostic area and a staff locker room. All interventions will be executed in line with the part of the pavilion already renovated and in operation on the west side. The interventions include new plants, as well as the renovation of existing electrical power transformation and hot/cold fluid generation and distribution facilities, which have been found to be grossly inadequate and obsolescent.

“Padiglione G “Birago Di Vische”, Amedeo Di Savoia Asl Torino” project is characterized by the following time schedule:

- 2 months for Design;
- 1 year and 2 months for Construction and Test;
- 20 years as “lease period”, starting once Test phase is completed.

The private party is an SPV ("ATI") established between the following players:

- CO.GE.FA S.p.a., acting as Group leader company, in charge of Design & Construction;
- ENPOWER S.r.l., in charge of Maintenance (100%) & Construction;
- ICCREA BANCAIMPRESA S.p.A, in charge of Financing.

4.6.2 PEF ANALYSIS

The project involves an overall investment (Capex) of 12.564.366,51€, to which a total of 800.000 € for maintenance expenses must be added.

Cost Item	**Amount (€)**
A. Construction	10.553.380,00
B. Design	872.560,00
C. "Somme a Disposizione"*	1.138.426,51
D. Capex (A+B+C)	12.564.366,51
E. Ordinary & Extraordinary Maintenance Overall Cost (sum over 20 years)	800.000

Table 28: *Capex composition - Padiglione G "Birago Di Vische", Amedeo Di Savoia ASL Torino*

*= Expenses for proposal preparation, testing, legal publication, etc..

In this project there are no contributions in equity, as the Capex is entirely financed by Debt. This is a typical setting in a BLMT agreement.

After the testing, each year the public body will pay to the private party a "lease fee" for the use of the infrastructure and a "maintenance fee" for ordinary and extraordinary maintenance works carried out by the private.

The "lease fee" is computed according to a financial amortization plan which sets debt repayment over 20 years in equal installments, which have been computed using a spread of 3,90% over the 6 months EURIBOR rate, and are indexed each year to this base rate.

The “maintenance fee” shall be paid by the Public Administration upon the full availability of the infrastructure and the ascertained compliance with the expected maintenance standards, in accordance with the key performance indicators (KPIs) which have been contractually agreed.

Lease fee	840.911,64€

Table 29: *Lease fee - Padiglione G “Birago Di Vische”, Amedeo Di Savoia Asl Torino*

Maintenance fee – years 1-5	25.000 €
Maintenance fee – years 6-10	35.000 €
Maintenance fee – years 11-15	45.000 €
Maintenance fee – years 16-20	55.000 €

Table 30: *Maintenance fee - Padiglione G “Birago Di Vische”, Amedeo Di Savoia Asl Torino*

PPP Type	Year of Submission of the Proposal	Capex (Investment)	Duration
BLMT (“Locazione Finanziaria”)	2022	12.564.366,51 €	20 Years

Table 31: *Main project features - Padiglione G “Birago Di Vische”, Amedeo Di Savoia Asl Torino*

4.6.3 MAIN CRITICALITIES IDENTIFIED

Several confidential documents concerning the initial private proposal have been consulted in order to properly analyse this project initiative (see “Exhibits”). This has allowed a better comprehension of the project, which has led to the identification of the following main criticalities:

- The spread on debt capital of 3.90% applied over the base rate appears to be slightly overestimated in relation to the reference conditions of financial markets (2022).
- A PSC calculation is reported in the documentation presented to IRES. However, the value of transferred risks is computed using the traditional standard tables developed by ANAC, as mentioned in ch.1 (“VALUE FOR MONEY ASSESSMENT THROUGH THE PSC METHODOLOGY”) of this paper. Using standard tables and figures, not accounting for

project-specific features, constitutes a simplification and could lead to a final PSC which may be far from reality. In this sense, it would be advisable to include in the risk matrix a quantitative evaluation of transferred risks. This could allow for a more robust approach to PSC analysis, which can lead to a better estimation of the VfM, as it will be shown in chapt. 5 of this paper.

Overall, the project does not have many critical issues. In fact, it should be noticed that it has been presented by companies that had already proposed the "Alba Casa Salute" project, thus having experience in the development and proposal of such operations.

4.6.4 EXHIBITS

For the development of the analysis of this case study, the following official and confidential documentation has been consulted:

- Sintesi Giuridico Economica
- Risk Matrix
- Draft Contract ("Bozza di Convenzione")
- Amortization schedule ("Piano di Ammortamento Finanziario" – PAF)
- Specificazione delle Caratteristiche del Servizio e della Manutenzione
- PSC Analysis ("Analisi della Fattibilità Finanziaria – AFF)
- Impegno a Costituirsi in Associazione Temporanea di Imprese (ATI)

5. DEVELOPMENT OF A GUIDELINE FOR NEW PPP PROPOSALS

5.1. General Overview

After the in-depth analysis of the case studies shown in the previous chapter, it can be understood that the major issues in the proposal of PPP on private initiative in Healthcare sector can be mainly traced back to four different areas:

- Risk Matrix: several case studies highlight some issues in the proper transfer of risk (availability, demand, etc.) and in its allocation to the private party, resulting in the impossibility for the Public Administration of recording the investment off balance sheet. In other cases, the risk matrix completely lacked the identification and/or description of specific risks.
- PSC: All case studies presented a risk matrix which lacked a quantitative evaluation of transferred risks. In other terms, the foundations for developing an adequate PSC analysis have not been laid. As a result, most of the case studies presented do not report any PSC analysis, while the other projects have shown an incomplete or incorrect methodology in the VfM computation.
- Financials: several proposals had inconsistencies regarding the poor transparency and/or computational issues in the financial data presented (e.g. WACC computation, Ce, applied spread, etc.).
- DSCR: In one of the cases where DSCR was set (BLMT projects are excluded), an issue was detected about its value.

The general results of the analysis are summarized in the following table.

Case Study	PPP Type	Main Criticalities			
		PSC	Risk Matrix	Financials (e.g. WACC)	DSCR
1-Cuneo Hospital	Mixed	X	X	X	
2-Alba Casa Salute	BLMT	X			
3-Bra Casa Salute	BLMT	X	X		
4-EPC ASL Alessandria	EPC	X	X	X	X
5-Radiodiagnostic ASL AL	O&M	X	X	X	
6-Padiglione Amedeo di Savoia ASL TO	BLMT	X		X	

Table 32: *Main critical areas identified during the case study analysis*

A dedicated sub-chapter will be associated to each of the four critical areas identified. In particular, it can be seen from the table that PSC appears to be the main issue, and therefore it will be treated in more depth, as a "cardinal principle" of the proposed guideline. Risk matrix and financials issues will also be addressed, while only a minor clarification on DSCR will be highlighted. The four sections are introduced by an additional subchapter "Section 0," which proposes an important clarification on the documentation required from the private party at the proposal stage.

Finally, it is important to stress once again that the scope of these guidelines covers all privately-led PPP proposals, as per art.183 paragraph 15 of the "Codice dei Contratti Pubblici", presented to Regione Piemonte in the Healthcare sector.

5.2.Section 0: Documentation Required

The purpose of this section is to draw a proposal about the documents that are required to the private party for the submission of a new project financing PPP initiatives to the Regione Piemonte as per Art.183 paragraph 15 of the "Codice dei Contratti Pubblici".

Within the guidelines "Analisi delle tecniche di valutazione per la scelta del modello di realizzazione dell'intervento: il metodo del Public Sector Comparator e l'analisi del valore", ANAC clearly describes the PSC as "*one of the elements of the feasibility project*", and presents the risk matrix as "the tool that identifies and analyzes the risks associated with the project to be undertaken and is used - at the planning stage - *for the preparation of the economic and financial feasibility document* and for checking the cost-effectiveness of resorting to PPPs as opposed to a traditional contract and - at the execution stage - for risk monitoring." (ANAC, 2018).

In PPPs on Public Administration initiative (Art. 183, paragraph 1-14, "Codice dei Contratti Pubblici"), the Public Administration awards projects that has previously included in their planning tools ("Programma Triennale"). Contracts are awarded on the basis of a technical and economic *feasibility project, which is prepared by the public entity*. In this context, it is apparent that it is a duty of the administration to quantitatively estimate the risks and to perform the PSC analysis, as clearly reported below:

"Al contratto di PPP o di concessione è allegata la "matrice dei rischi", che costituisce - parte integrante del contratto medesimo. Detto documento è elaborato dal RUP o da altro soggetto individuato in conformità al regolamento organizzativo dell'amministrazione ed è definito caso per caso sulla base delle caratteristiche specifiche della prestazione oggetto del contratto, con l'obiettivo di disciplinare ex-ante modalità e limiti di revisione delle condizioni economico-finanziarie poste a base del PEF e offerte in sede di gara." (ANAC guidelines, nr.9, 2018)

"Il PSC è uno strumento manageriale utilizzato da diverse amministrazioni" (ANAC, 2009)

In privately-led PPP procedures, instead, *it is the private party's responsibility to develop the feasibility project*. Problems arise because it is recognized that the law itself does not exhaustively specify the necessary documentation to be included in the privately-led PPP proposals. In particular, art. 183 paragraph 15 states that:

<< the initial proposal must contain a feasibility project, a business plan, a financial model certified by a bank and a draft contract with service specifications. >> The article than says that the

administration shall evaluate the proposal within three months, carrying out a feasibility check and inviting the proposing operator to make any necessary changes to the feasibility project; if the proposer does not make the required changes, the proposal will be discarded. In case of positive evaluation, the approved feasibility project is inserted into the programming tools of the administration ("Programma Triennale"), and the bidding process can start. (cf. chapter 1.3.3)

It can be seen that the legislation does not directly mention the PSC analysis and Risk Matrix among the required documents for the privately-led PPP proposals, thus creating a sort of "legislative gap" left to the interpretation of practitioners, which should try to interpret ANAC guidelines in view of this peculiar awarding procedure.

In light of these considerations, this section seeks to develop a proposal for the interpretation of the legislation that clearly delineates the documentation required to the private party for the submission of a new project financing PPP proposal to the Regione Piemonte as per Art.183 paragraph 15 of the "Codice dei Contratti Pubblici" in the Healthcare sector. It is important to clarify that this is a key aspect which has a major impact on the entire administrative procedure, and thus represents the first step which is required for the development of the guideline presented in this research.

Having clearly defined the context, it is now turn to work on the content of the proposal. In line with what has already been discussed throughout this paper, it is deemed appropriate to suggest that the feasibility project submitted by the private party to the Regione Piemonte in the modalities described in art.183 paragraph 15 of the "Codice dei Contratti Pubblici" should also include a Risk Matrix, which should be arranged in compliance with ANAC guidelines. It is considered useful to specify the importance of identifying on a quantitative scale the probability and impact values for each risk reported in the risk matrix. If a quantitative estimate of each risk is not available, it is recommended to have a quantitative estimate of at least the transferable risks, as they are a necessary input for developing a proper PSC analysis. This is believed to be the most reasonable solution because the private party is the one submitting the proposal and thus, by virtue of its experience and expertise, can provide a more accurate estimate of the risks involved. The Public Administration will then have the responsibility to proceed with the calculation of the PSC, which should be developed based on the quantitative risk estimate provided by the private party and indicated in the risk matrix. Obviously, the PSC should be calculated with critical judgment about the estimates provided. Further support in arranging this documentation is provided by the guidelines proposed in this paper, which are included in the following sections.

As a result of these considerations, Sections 1, 2, and 3 of this guideline will be addressed to the private party, while Section 4 is aimed at supporting the Public Administration.

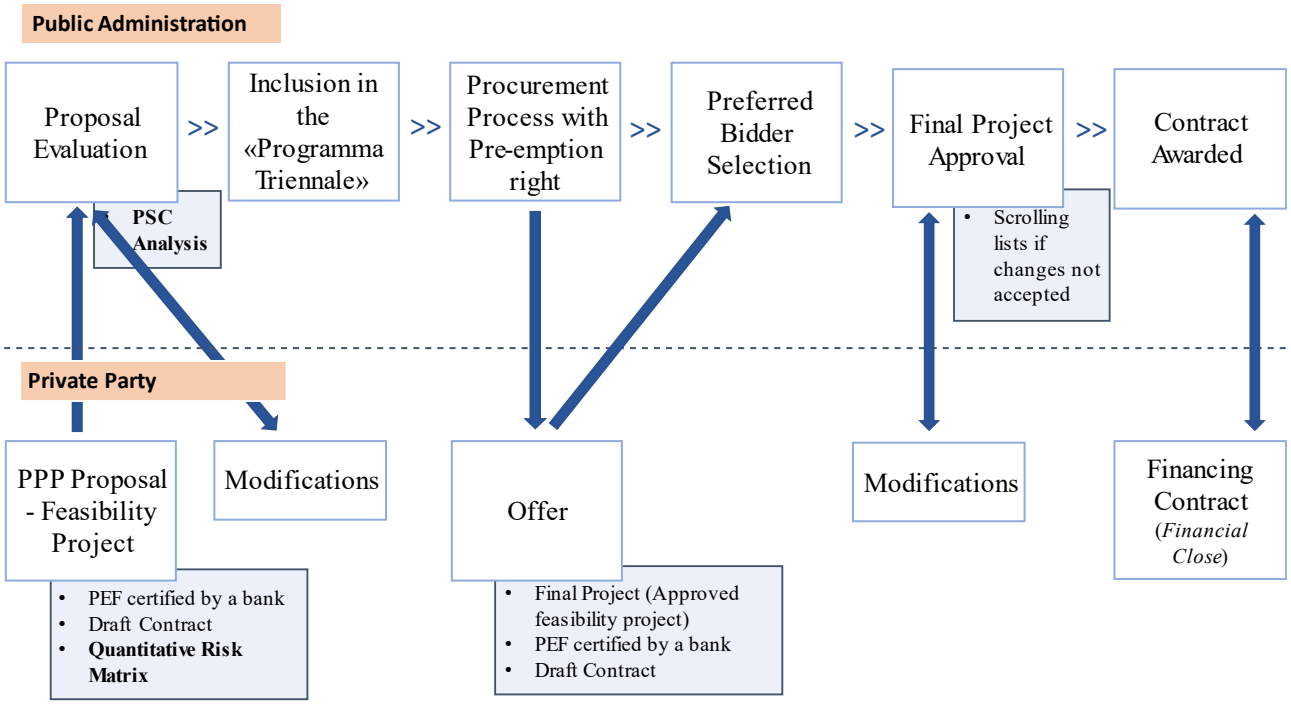

Figure 14: *PPP process on private initiative - focus on the minimum set of documentation required*

In order to allow for a comprehensive overview, table 33 shows a proposed minimum set of documents that the private party should submit to Regione Piemonte in order to properly activate the PPP project financing proposal as per Art.183 paragraph 15 of the Public Contracts Code.

Documents to be presented	Notes
Feasibility project – includes Risk Matrix with quantitative evaluation of risks	ANAC guidelines nr. 9 constitute the major source of information for the construction of the risk matrix. Section 2 of this guideline aims at giving further support.
SPV incorporation documents	Often referred to as "Impegno a Costituirsi in Associazione Temporanea di Imprese (ATI)"
Draft Contract (Bozza di Convenzione)	
Service specifications	
Business Plan (PEF)	The Financial model (Amortization schedule for BLMT projects) must be certified by a bank. Section 2 and 3 of this guideline aim at giving further details on the information to be disclosed, providing specific support.

Table 33: *Proposed Minimum set of documents required to the private party for the submission of a PPP project financing initiative to the Regione Piemonte*

5.3. Section 1: Risk Matrix

As already mentioned in chap.1, a "risk matrix" is attached to the documents containing the PPP proposal and is an integral part of the contract. The risk matrix is used as an element in the evaluation of the bid. Furthermore, this document is used in the execution phase, since being represented in it the allocation of risks between the parties as definitively established in the contractual documents, it allows easy control over the maintenance of the risks transferred to the private entity.

The Italian legislator has appointed the Autorità Nazionale Anticorruzione (ANAC) to develop general guidelines to be used as a reference point on the risk transferral issue (Art. 181, paragraph 4, Codice dei Contratti Pubblici). These are mostly generic guidelines developed at a high level, which are not completely able to address some open points of the legislative framework, as already highlighted in “Section 0” of this paper.

As previously discussed, the first recommendation is that the Risk Matrix, which is developed by the private party, should be arranged in compliance with ANAC guidelines, identifying on a quantitative scale the probability and impact values for each risk reported in the risk matrix. If a quantitative estimate of each risk is not available, it is recommended to have a quantitative estimate of at least the transferable risks. In such a way, the Risk Matrix will constitute a sound input for the development a proper PSC analysis.

Secondly, the purpose of this section is also to report all the risks that have been identified in the case studies analyzed (cf. chap. 3), in order to have a kind of specific checklist of risks with reference to the Healthcare sector, and relative to the types of PPPs analyzed, and to report their expected allocation. The aim is to provide a guideline that complements the ANAC one, in order to provide more specific guidance that can better assist the private party in the drafting of the risk matrix.

The table shows, for each type of risk, the category of PPP (among the ones analysed in chap.3) in which the risk was identified by the parties and included in the relevant risk matrix, and the corresponding allocation.

It should be noted, however, that the following table, although more narrowly targeted with respect to the ANAC indications, is still constituted as a generic reference, a guideline, and that each PPP proposal should include its own risk matrix that is able to capture the peculiarities of the proposal under consideration. The following table should not be understood by the private party neither as an

exhaustive list nor as a sort of “mantra” to be followed and replicated faithfully, but rather as a framework, a starting point to apply a proper risk management procedure.

RISK TYPE	BLMT	EPC	PPP through Project Finance	O&M	Risk borne by Public Administration	Risk borne by private entity
CONSTRUCTION RISK						
Expropriation Risk			X		X	
i)Permits Risk			X	X	X	X
ii)Permits Risk (Administrative Risk)	X	X				X
i)Environmental/Archaeological Risk	X		X		X	
ii)Environmental/Archaeological Risk (EPC)		X			X	X
Interference Risk - Linked to the presence, in the sections of interest, of works of various kinds, above or below ground			X			X
Design Risk	X	X	X	X		X
Variants Risk - Risk of variants/changes required by the Grantor, which are not related to causes imputable to the concessionaire		X			X	
Variants Risk - Risk of variants/changes required by the Grantor, due to defects in design or execution of works for causes imputable to the Concessionaire.			X			X
Testing Risk			X			X
i)Execution Risk - risk of executing the work non-conforming to the project specs. (PPP through PF)			X		X	X
ii)Execution Risk - risk of executing the work non-conforming to the project specs.	X	X		X		X
Risk of Delay in Construction	X	X	X	X		X

Raw Material Risk	X	X	X	X		X
Risk of contractual default of suppliers and subcontractor	X	X	X	X		X
Industrial relations Risk	X	X	X	X		X
Public financing Risk			X		X	
Insurance Risk			X		X	X
Missed completion of the installation of sanitary technologies and furnishings			X		X	
Obsolescence Risk			X	X		X
Default of Constructor		X	X	X		X
Risk of Commissioning	X					X
Risk of personal injury or property damage	X					X
Risk of availability and appropriateness of technology				X		X

Table 34: *Healthcare Sector PPPs - List of Construction Risks with expected allocation*

RISK TYPE	BLMT	EPC	PPP through Project Finance	O&M	Risk borne by Public Administration	Risk borne by private entity
FINANCIAL RISK						
Risk-free rate Variation (Until financial close)			X		X	
Risk-free rate Variation (After financial close)		X	X			X
Financing: Pricing condition - Risk of a cost increase for financing, namely in commissions,..			X			X
Financing Risk - Lack of financial resources necessary to cover the investment	X	X	X	X		X

Table 35: *Healthcare Sector PPPs - List of Financial Risks with expected allocation*

RISK TYPE	BLMT	EPC	PPP through Project Finance	O&M	Risk borne by Public Administration	Risk borne by private entity
O&M RISK / AVAILABILITY RISK						
Demand Risk ("Operating Risk" in EPC)		X	X	X		X
Availability Risk	X	X	X	X		X
Utility cost Risk			X		X	
Maintenance Risk - unplanned maintenance resulting from design or construction shortcomings	X		X			X
Energetic performance Risk			X			X
Performance Risk - Risk of non-compliance with the technical requirements / specifications as listed in the contract	X	X	X	X		X
Obsolescence Risk	X		X			X
Environmental Risk - Risk of contamination of the external environment			X		X	
Failure of the operator			X			X
Residual value	X		X			X
Risk of operating costs being higher than budgeted		X		X		X
Failure to perform maintenance service	X	X				X
Risk of missed Interventions required due to design errors or omissions	X					X
Unavailability of spare parts				X		X
Clinical Risk				X		X

Table 36: *Healthcare Sector PPPs - List of O&M Risks with expected allocation*

RISK TYPE	BLMT	EPC	PPP through Project Finance	O&M	Risk borne by Public Administration	Risk borne by private entity
RISKS COMMON TO THE CONSTRUCTION AND OPERATIONS PHASES						
Force Majeure Risk	X	X	X	X	X	X
Legislative changes	X	X	X	X	X	
Inflation Risk		X	X	X		X

Table 37: *Healthcare Sector PPPs - List of generic Risks with expected allocation*

5.4. Section 2: Financials ("Convenienza Economica")

In response to the problems encountered in the different case studies analyzed, the purpose of this section is to provide a general framework to help Private Parties understand what information regarding the economic profitability of the project to include in the PEF and at what level of detail.

First of all, NPV and the IRR are the two indicators normally referred to when determining the economic profitability of a project initiative. Financial equilibrium is achieved when project revenues are able to cover operating & investment costs, the cost of invested capital, and taxes. Therefore, the condition of economic equilibrium is verified when:

- The project NPV is close to zero, and
- Project IRR is close to the Weighted Average Cost of Capital (WACC), and
- Equity IRR is close to the Cost of Equity (Ce).

Where these conditions are not met, it means that the project either destroys value or generates more value than the appropriate return given the characteristics of the operation itself.

The PEF must clearly display all these items above, and each item should be properly justified. The project NPV and IRR are computed from the project cash flows, as already mentioned in chapter 1 of this paper.

The WACC, instead, is usually calculated from the following formula:

$$WACC = Re * \left(\frac{E}{D+E}\right) + Rd * \left(\frac{D}{D+E}\right) * (1 - Tc)$$

Where:

- Re = Cost of Equity
- E = Equity contribution
- D = Debt contribution
- Rd = Cost of Debt
- Tc = Tax rate

It is extremely important to properly justify in the PEF the reported values of Re and of Rd. This means providing the IRES team with all necessary elements to properly understand the assumptions behind the final numbers reported in the PEF, allowing the team to deliver a complete evaluation.

The calculation method of Re should always be indicated in the PEF. The most commonly used method is the Capital Asset Pricing Model (CAPM):

$$Re = Rf + \beta * [E(Rm) - Rf]$$

Where:

- Rf = Risk free rate of return
- β= Beta of the project
- $E(R_m)$ = Expected market return
- $[E(R_m) – Rf]$ is usually called “Equity Risk Premium”

Usually, Rf can be considered equal to the BTP yield over a period equal to the term of the concession. Moreover, in the PEF, it is always advisable to show the calculation procedure for the beta, and the related data source. Similarly, it is highly recommended to provide the source of the data for the E(Rm) value reported.

Rd, instead, is the cost of debt that is required to finance the project. It is usually calculated by taking a base rate (e.g. EURIRS) and applying a spread to it, in order to remunerate for the risk. As a final remark, for Rd, the reference base rate and the spread applied must be clearly disclosed in the PEF.

5.5. Section 3: DSCR (Sostenibilità finanziaria)

DSCR is the indicator normally referred to when determining the financial viability of a project initiative. This is the least critical area and only a quick remark will be made on this subject.

Analysing the six case studies, as shown in the table, it can be seen that the average post-tax DSCR for a PPP project in the Healthcare sector should not be lower than 1.40. It should be specified, however, that the target DSCR required varies according to the risk profile of the project and the creditworthiness of the shareholding companies, and thus the assessment of DSCR cannot be completely separated from a case-by-case approach.

Yet, it is believed that the indication in the table can still provide a useful support, a rule of thumb, and an initial numerical reference to the private party when submitting the proposal and during the financial modelling.

Case Study	PPP Type	Proposed Avg. Post-tax DSCR	Approved (Yes/No)
1-Cuneo Hospital	PPP through PF	1.40	Yes
2-Alba Casa Salute	BLMT	n.a.	
3-Bra Casa Salute	BLMT	n.a.	
4-EPC ASL Alessandria	EPC	1.30	No
5-Radiodiagnostic ASL AL	O&M	1.48	Yes
6-Padiglione Amedeo di Savoia ASL TO	BLMT	n.a.	

Table 38: *Proposed Avg. Post-tax DSCR in the six case studies*

5.6.Section 4: PSC

PSC analysis represent for sure the main issue during the proposal of PPPs to the Public Administration, as highlighted in the previous analysis. In fact, all case studies presented a risk matrix which lacked a quantitative evaluation of transferred risks, thus preventing the proper development of an adequate PSC analysis. As a result, most of the case studies do not report any PSC analysis, while the other projects have shown an incomplete or incorrect methodology in the VfM computation.

As stated earlier, one of the main causes of this problem is the "legislative gap" which was addressed in "section 0" of this guideline. However, the lack of a standard and commonly-agreed methodology for calculating the PSC at the regional and/or national level also represents a key driver.

The aim of this section, therefore, is to build a standard methodology for supporting the Public Administration in the preparation of a sound PSC analysis, in response to PPP project initiatives that are presented by private parties to Regione Piemonte with regards to the Healthcare sector.

In order to better represent the concepts exposed, the Cuneo Hospital case study will be taken as an example. In fact, it can be said that, being configured as a "mixed" PPP, it really constitute a representative example, embodying the different challenges and complexities that can be encountered in the preparation of a PSC analysis. Moreover, with regard to this specific case study, the private party has ultimately provided a quantitative risk matrix, in response to IRES solicitation. The Cuneo Hospital case study, therefore, can also provide a numerical example of PSC calculation that complements the theoretical concepts of this guideline.

Guideline Proposal

5.6.1. STEP 1: DATA COLLECTION

The first step in order to develop a sound PSC analysis is the collection of all the relevant data concerning the project.

After the Draft Contract definition, relevant documents to be consulted are mainly:

- Project Time schedule
- PEF
- Risk Matrix

Relevant information regarding Cuneo Hospital Case study Time schedule are listed in the following table:

Activity	Duration
Design	1 year and 6 months (from month 0 to 18)
Construction	3 years and 6 months (from month 18 to 60)
Concession Period	25 Years (from month 60 onwards)

Table 39: *Cuneo Hospital time schedule*

5.6.2. STEP 2: CAPEX CALCULATION

Design and Construction are capitalized costs. As already highlighted in chap 1 the PFI usually entails an higher expenditure with respect to the traditional procurement approach. The difference is due to additional costs for legal, administrative, tax, financial and specialist services generally required for the draft of the final project, the draft contract and the business plan (prepared by the private party).

Capex calculation for the Cuneo Hospital case study is reported below:

Cost Item	PSC	PFI
Design	11,180,000	11,180,000
Other Expenses (e.g. legal advertising)	3,752,000	3,752,000
Proposal Preparation		4,700,000
Bank Guarantee		231,000
Construction Cost	345,201,000	345,201,000
Other costs during Construction	4,325,000	4,325,000
TOTAL CAPEX	**364,459,000**	**369,390,000**

Table 40: *Capex calculation for PSC and PFI cases - Cuneo Hospital*

5.6.3. STEP 3: COST OF FINANCING

Financing cost is generally higher for a PFI initiative with respect to the PSC case. This is linked to two main reasons:

- The cost of advisory and structuring activities for the arrangement of a "Project Finance" financing scheme.
- The financing is negotiated by the Private Partner who generally has access to less favourable financial conditions than those available to the PA.

In the PSC case, financial costs are represented by the debt repayment. In fact, while developing the PSC analysis, a widely accepted assumption is that the PA will finance the entire CAPEX with public Debt. Therefore, mortgage payments will represent the financial costs to the PA.

In order to compute mortgage payments, it is generally assumed that the annual cost of a fixed-rate loan to a public counterpart can be placed equal to the repayment installment of an ordinary loan provided to municipalities and provinces by the Cassa Depositi e Prestiti (CDP).

As per 25/02/2023, the interest rate applied by CDP on an ordinary loan provided to municipalities and provinces with a 20-year amortization plan is 4.33%. Therefore, in the Cuneo Hospital case study a 17-year constant-installment mortgage was assumed (the same duration as set in the PFI case), with an applied interest rate of 4.33 %.

PSC	
DEBT	
Duration (Years)	17
CDP interest rate	4.33 %
Debt constant annual fee (€)	30,729,736.12

Table 41: *PSC financing costs - Cuneo Hospital*

In the context of PFI, and in particular in the peculiar case under analysis, the financial cost is represented by the initial public contribution distributed during construction phase (it has been supposed to be covered with public debt from Cassa Depositi e Prestiti, at the same conditions highlighted in the PSC case) and by the annual amount "Canone Investimento" which is part of the contract contribution, equal to 22,700,000 €/year.

PFI	
Initial Public Contribution (€)	121,899,000
Duration (Years)	17
CDP interest rate	4.33 %
Debt Annual Fee (€)	10,278,039
"Canone Investimento" Annual Fee (€)	22,700,000

Table 42: *PFI financing costs - Cuneo Hospital*

As already mentioned in chapter 1, Operations and Maintenance costs can be considered the same for both PSC and PFI alternatives.

Annual O&M expense (€)	21,333,000

Table 43: *PSC and PFI annual O&M costs - Cuneo Hospital*

5.6.4. STEP 4: DISCOUNT RATE

In order to compute PSC and PFI values, all cost items should be properly discounted. The discount rate which was used to discount the cash flows has been set equal to the interest rate applied by CDP (4.33%) in line with the European Commission's guidelines (3%-5.5%). In order to make the cash flows arising from the above scenarios comparable, it is necessary to discount them to a reference date, which was chosen to be in the year 2023.

At this point, all elements are in place to compute the Raw PSC and the PFI cost. However, it should be noticed that, in order to properly compute the PFI cost when there is the transfer of Demand risk to the private party, any revenue accrued from the commercial exploitation of the facilities should be either subtracted to the Raw PSC (see point 1 below), or included as an "opportunity cost" in the PFI case (see point 2 below). In the case taken as an example, the second way of proceeding has been chosen.

1. $\boldsymbol{Raw\ PSC} = Capital\ Costs + Operating\ Costs - \boldsymbol{Revenues\ from\ commercial\ activity}$
2. $\boldsymbol{PFI} = Capital\ Costs + Operating\ Costs + Transferrable\ Risks\ Cost + \boldsymbol{Revenues\ from\ commercial\ activity}$

5.6.5. STEP 5: TRANSFERRABLE RISKS EVALUATION

The Italian Legislation has defined PPPs as a contract in which the transfer of risk to the private economic operator entails the allocation to this latter, in addition to the construction risk, also of the risk of availability or, in the case of profitable external activity, of the demand risk for services rendered (Art. 180, paragraph 3, Codice dei Contratti Pubblici). The complete definition of risk transferral and the conditions for the Public Administration to classify an initiative off balance sheet have already been highlighted in chap. 1 "Risk Analysis" of this paper.

Two main assumptions are generally made in order to allow a more straightforward computation of the PSC with Risk:

1. In view of its expertise, it is usually introduced the hypothesis of optimal management by the Private Partner of the risks transferred to it. In this way, the PSC is set up as a "Best Case scenario": by going to add up the risks transferred to the Raw PSC, taking advantage of the PFI data (e.g. Risk Matrix), it inherently assumes optimal management of them by the public entity as well, on par with what the private entity would do. In such a way, the best case scenario for the Public Administration is

compared with the PFI in the VfM computation. In this way, if there is VfM in the Best Case, all the more reason there will be with any estimates provided by the administration (which by definition will be higher than the values provided by the private party)

2. Moreover, for simplicity, the value of retained risk is usually considered the same for both PSC and PFI, and therefore just the transferable risks part is included in computations.

Following this premises, to proceed with the calculation of the "PSC with risk", the transferred risks should be included as an "additional cost" compared to the Raw PSC scenario. To do so, the amounts reported in the risk matrix developed by the private party will be considered as reference values for risk quantification, after critical analysis by the RUP of the figures entered. It is useful, in order to maintain some order, to separate risks related to the construction phase from those related to the O&M phase (following the division that is usually already reported in the risk matrix), because these are "costs" that will typically be discounted over different periods. The amount computed for each risk must be then carefully distributed over years and discounted. This computation has to be carried out for each risk which is transferred to the private party.

With regard to Cuneo Hospital case study, each risk that was reported in the risk matrix and was transferred to the private party has been reported in the appropriate section of the excel template file (cf. Fig. 15) with the corresponding amount. Costs related to construction risks were then spread over the 5-year term of the construction works, while costs related to O&M risks were distributed considering the concession period as the time horizon.

						1	2	3	4	5	6	7	8
						2023	2024	2025	2026	2027	2028	2029	2030
						Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
ONERI FINANZIARI				522,405,514.04							30,729,736.12	30,729,736.12	30,729,736.12
	COSTRUCTION PHASE RISKS												
Risk	Probability	Impact	Amount	Notes									
Rischio Interferenze	0.05	0.05	1,020,890.16 €			204,178.03 €	204,178.03 €	204,178.03 €	204,178.03 €	204,178.03 €			
Rischio di Progettazione	0.15	0.125	7,656,676.21 €			1,531,335.24 €	1,531,335.24 €	1,531,335.24 €	1,531,335.24 €	1,531,335.24 €			
Rischio varianti	0.1	0.1	4,083,560.64 €			816,712.13 €	816,712.13 €	816,712.13 €	816,712.13 €	816,712.13 €			
Rischio permessi	0.1	0.2	8,167,121.29 €	Shared		1,633,424.26 €	1,633,424.26 €	1,633,424.26 €	1,633,424.26 €	1,633,424.26 €			
Collaudo	0.05	0.05	863,000.00 €			172,600.00 €	172,600.00 €	172,600.00 €	172,600.00 €	172,600.00 €			
Rischio esecuzione Opera	0.10	0.15	5,178,021.33 €	Shared		1,035,604.27 €	1,035,604.27 €	1,035,604.27 €	1,035,604.27 €	1,035,604.27 €			
Rischio costo materiali	0.20	0.25	17,260,071.09 €	Only for Constr. Cost		3,452,014.22 €	3,452,014.22 €	3,452,014.22 €	3,452,014.22 €	3,452,014.22 €			
Rischio inademp. Fornitori/subappaltatori	0.05	0.10	1,726,007.11 €	Only for Constr. Cost		345,201.42 €	345,201.42 €	345,201.42 €	345,201.42 €	345,201.42 €			
Rischio rel. Industriali	0.03	0.03	255,222.54 €			51,044.51 €	51,044.51 €	51,044.51 €	51,044.51 €	51,044.51 €			
Rischio costo assicurazioni	0.10	0.10	3,452,014.22 €	Only for Constr. Cost		690,402.84 €	690,402.84 €	690,402.84 €	690,402.84 €	690,402.84 €			
Rischio disponibilità assicurazioni	0.03	0.05	431,501.78 €	Only for Constr. Cost		86,300.36 €	86,300.36 €	86,300.36 €	86,300.36 €	86,300.36 €			
Rischio obsolescenza	0.05	0.20	345,201.42 €	Only for Constr. Cost		69,040.28 €	69,040.28 €	69,040.28 €	69,040.28 €	69,040.28 €			
Rischio fallimento soggetto costruttore	0.10	0.25	10,208,901.61 €			2,041,780.32 €	2,041,780.32 €	2,041,780.32 €	2,041,780.32 €	2,041,780.32 €			
Variazione del tasso base successivamente al financial close	0.15	0.20	12,250,681.93 €			2,450,136.39 €	2,450,136.39 €	2,450,136.39 €	2,450,136.39 €	2,450,136.39 €			
Condizioni di pricing del finanziamento	0.10	0.15	6,125,340.97 €			1,225,068.19 €	1,225,068.19 €	1,225,068.19 €	1,225,068.19 €	1,225,068.19 €			
Finanziamento	0.05	0.20	4,083,560.64 €			816,712.13 €	816,712.13 €	816,712.13 €	816,712.13 €	816,712.13 €			
Rischio di inflazione	0.15	0.10	19,245,915.00 €			3,849,183.00 €	3,849,183.00 €	3,849,183.00 €	3,849,183.00 €	3,849,183.00 €			

Figure 15: *"PSC With Risk" computation (Construction Phase, Cuneo Hospital case study)– extract from the excel template*

Each discounted value should be then summed up in order to obtain the full quantification of the Transferrable Risks.

Following this approach, the overall amount of transferable risk value obtained for the Cuneo Hospital case study is 138,810,868.35 €[2].

5.6.6. STEP 6: VFM

Having quantified the various transferred costs, it is now possible to proceed with the computation of the PSC with Risk. This is the value which has to be compared with the PFI cost, in order to understand whether the project initiative is able to generate Value for Money.

$$PSC\ With\ Risk = \text{Raw}PSC + Transferable\ Risks\ Cost$$

Finally, after having obtained PSC with risk, and having understood the PFI cost, these two figures have to be compared, in order to determine whether the project initiative is able to generate VfM, and it is therefore worth pursing it.

$$VfM = PSC\ with\ Risk - TOT\ PFI$$

From the above formula it follows that:

PSC with Risk > TOT PFI	PPP initiative is able to generate VfM
PSC with Risk < TOT PFI	PPP initiative does NOT generate VfM

Table 44: *Condition to be met in order to generate VfM*

The following results have been obtained for the Cuneo Hospital case study:

PPP		**TRADITIONAL PROCUREMENT**	
A.RAW PFI (€)	656.283.217,76	B. RAW PSC (€)	555.303.379,64
		C. Transferable Risks Cost (€)	138.810.868,35
D.TOT PFI (=A)	**656.283.217,76**	**E. PSC With Risk (B+C)**	**694.114.247,99**

VALUE FOR MONEY (E-D)	**37.831.030,23**

Table 45*: VfM – Cuneo Hospital*

[2] Detailed computations are included in the attached excel file.

Revenues accrued from the commercial exploitation of the facilities (parking lots, bar, etc.) have been included as an "opportunity cost" in the PFI computation.

The elaboration shows a Value for Money of € 37,831,030.23 in favour of the PPP operation. Thus, it can be said that, as a result of the transfer of construction and availability risk, from this preliminary analysis the PPP transaction appears to be a slightly more cost-effective approach with respect to the traditional procurement, and therefore it should be worth for the Public Administration to pursue it.

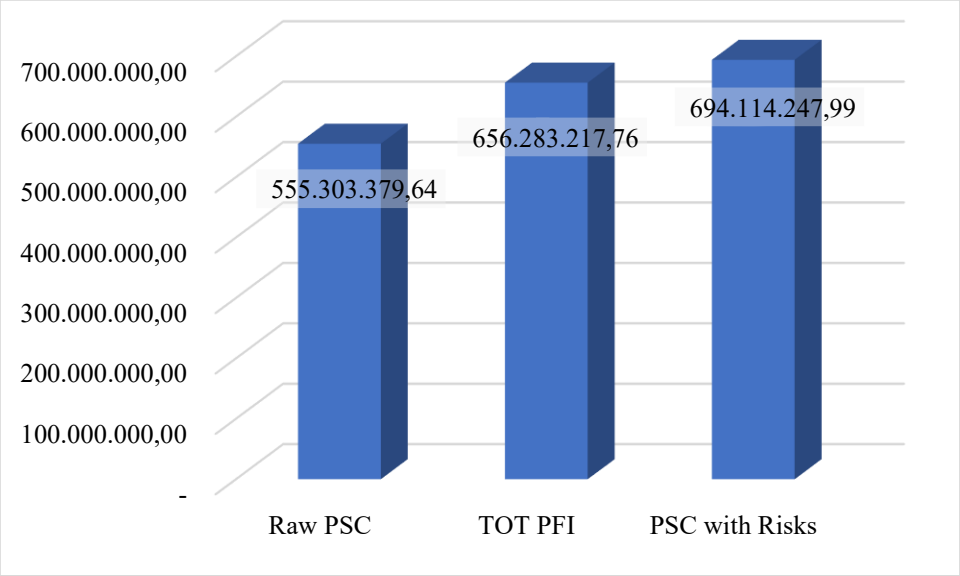

Figure 16: *"Raw PSC", "TOT PFI" and "PSC with Risk" – Cuneo Hospital case study*

5.6.7. TEMPLATE

In addition to presenting the more theoretical aspects of the PSC calculation methodology, it has also been developed, as part of this research, a dedicated template for the purpose of allowing the administration a smoother and more standard approach to PSC calculation. The template, which is included as an attachment to this paper, consists basically of an excel file that is divided into several worksheets:

- "Project Data": This worksheet is used to recap the main project information, with a focus on the time schedule
- "PSC_Base": This section includes the "Raw PSC" computation
- "PSC_With_Risk": In this worksheet it can be computed the full cost of transferrable risks
- "PFI_Data": This worksheet is used to recap the main information for the PFI alternative. In case there is an initial public contribution, in this section it can be computed the Debt Annual Fee that the government will pay, in the assumption that this amount will be covered through a CDP mortgage.
- "PFI": In this section it can be computed the overall cost of the PFI alternative.
- "Graphs": In this worksheet the PSC, PSC with risk and PFI alternative are compared graphically. A recap table show the VfM generated by the project.

The template was constructed based on the approach for the VfM computation that has been outlined in the guidelines contained in this paper. In fact, the excel file itself was used to compute the VfM with regard to the Cuneo Hospital case study. Indeed, all the results presented in Section 4 are the outcome of processing the project data by leveraging the excel template.

For completeness and to better illustrate the procedure, both the template and the excel file with the computations conducted on the real case study are attached to this research paper.

6. CONCLUSIONS

This paper focused on the development of a set of standard guidelines for the proposal of private initiative PPPs delivered through Project Financing schemes in the Healthcare sector, and to the widening of the general knowledge on PPPs in order to facilitate and speed up the recourse by private entrepreneurs to such projects.

To this end, after an extensive literature review and a brief market analysis, the research shifted to the practical aspect, examining six case studies of PPP proposals on private initiative in Healthcare presented to the Regione Piemonte. From the study of these projects, four main critical areas have emerged in the submission of PPP proposals. In line with the objective of the thesis, these four critical areas resulted in the development of an equal number of sections in the proposed guideline: PSC, Risk Matrix, Financials, DSCR. In particular, the greatest contribution was developed in the PSC area, which turned out to be the most critical component and the field where all the case studies analysed had inconsistencies. An additional section within the guidelines ("Section 0") was also developed in order to propose a minimum set of documents which should be submitted by the private party to the Regione Piemonte for new PPP project initiatives as per Art.183 paragraph 15 of the "Codice dei Contratti Pubblici".

Parallel to the development of the guidelines, it has also been arranged a dedicated standard excel template in order to support the public party in the evaluation of PPP proposals, which can be found as an annex of the research work.

Currently, the PPP procurement process as per Art.183 paragraph 15 of the "Codice dei Contratti Pubblici" is regulated by Italian law and supplemented with ANAC guidelines. These, however, do not seem to address the subject in a comprehensive manner, leaving some room for interpretation by practitioners, who should try to interpret ANAC recommendations in view of this peculiar awarding procedure. The purpose of this thesis was to provide an initial, more specific support to both private and public parties while submitting PPP proposals to the Regione Piemonte in the Healthcare sector, by the development of a dedicated guideline.

This guideline, however, represent only a first step because it is based on a limited number of case studies. In fact, it is believed that there is still a lot of work to be done in Italy to improve this procedure, perhaps following the example of more virtuous countries in the PPP field (e.g. The methods and tools adopted in England for PSC calculation), and moving in a direction of greater data

collection and data sharing, in order to allow for a constant improvement and standardization of procedures.

Indeed, as highlighted in the research, the complexity of administrative procedures seems to be one of the main reasons for which the PPP market in Italy does not seem to be fully developed, especially when compared with other markets in major European countries.

However, there is the belief that some macroeconomic variables could potentially lead the future development of the national PPP market. Among them, the investments envisaged in the PNRR should be mentioned. The PNRR, in fact, explicitly points to PPP as a suitable tool for the post-pandemic recovery of Italy. In this sense, the enrichment and clarification of PPP administrative procedures would therefore also represent a way to ensure that the opportunities offered by this new macroeconomic environment envisaged by the PNRR can be fully seized. On the other hand, it should be noted that other variables could instead represent a slowing factor for the development of this market. The delicate economic situation that many countries are facing is characterized by a high inflationary rate, which goes to affect the financial equilibrium of the business plans of several PPP initiatives, making the financial closing process more challenging. Despite this, there is no doubt that the PPP market in Italy still has ample room for growth, and represent an important economic opportunity for the development of the country.

In conclusion, there is the wish that the work contained in this paper can be received as an incipit, a starting point toward the future elaboration of a more in-depth set of standard recommendations and guidelines with a national outlook, aimed at enabling the development of a prolific ecosystem of privately-led PPP initiatives, which will potentially lead to a flourishing PPPs market in Italy.

6.1. Closing Note – The impact of the reform of the "Codice dei Contratti Pubblici"

On Dec. 16, 2022, the Italian government preliminarily approved the new Code "Codice dei Contratti pubblici ai sensi dell'articolo 1 della legge 21 giugno 2022, n. 78".

The revised regulatory scheme will be applied to all new procedures as of April 1, 2023. As of July 1, 2023, the previous Code (Legislative Decree No. 50 of April 18, 2016) will be abrogated, and the new provisions will also apply to all proceedings already underway.

The newly-approved regulatory scheme dedicates the entire "Libro IV" to Public-Private Partnership.

The objective of the reform is to make PPP more attractive to governments, economic operators and institutional investors through a simplification and rationalization of administrative processes and of legislative structure. This was also being pursued in terms of wording, where more rational and simple language was used, eliminating all repetitive and overabundant provisions. Moreover, as opposed to the 2016 Code, there has been a move toward more comprehensive and self-inclusive regulations, where references to Traditional Procurement regulations are few and circumstantial.

For the sake of completeness, this concluding section will therefore summarize the major legislative changes introduced by the new decree, with regard to the main topics presented within this research paper:

- **PPP Definition**: The definition of PPP which was included in Art. 3 paragraph 1, lett. eee) of the Code has been replaced with another expression, stating that:
  "Il partenariato pubblico-privato è un'operazione economica in cui ricorrono congiuntamente le seguenti caratteristiche:
  a) tra un ente concedente e uno o più operatori economici privati viene instaurato un rapporto contrattuale di lungo periodo per raggiungere un risultato di interesse pubblico;
  b) la copertura dei fabbisogni finanziari connessi alla realizzazione del progetto proviene in misura significativa da risorse reperite dalla parte privata, anche in ragione del rischio operativo assunto dalla medesima;
  c) alla parte privata spetta il compito di realizzare e gestire il progetto, mentre alla parte pubblica quello di definire gli obiettivi e di verificarne l'attuazione;
  d) il rischio operativo connesso alla realizzazione dei lavori o alla gestione dei servizi viene allocato in capo al soggetto privato."

(Art. 174, paragraph 1 “Codice dei Contratti Pubblici ai sensi dell'articolo 1 della legge 21 giugno 2022, n. 78”, 2023)

It is clear that in such a context the PPP is no longer defined simply as a contract, but it rather falls under the broad notion of “Economic Operation”. The four components that must exist for the economic transaction to qualify as a Public-Private Partnership has been highlighted in the article. In this context, the term PPP seems to describe a general institution that can be implemented through different types of contracts, among which the leading one is the concession (Concession, BLMT, DBFM, etc.). In addition, it is specified the principle of non-exclusivity of the indicated contractual forms: While implementing a PPP procedure, administrations may also resort to contractual schemes different from those listed in paragraph 3 of article 174, as long as they adhere to the contents expressed by paragraph 1.

Looking at the different definitions of PPP highlighted in chapter 1 of this research, it can be understood that this revised article seems to be more in line with the European framework (Cf. PPP definition in the 2004 Green Paper on Public-Private Partnerships and Community law on public contracts and concessions), and does not have a significant impact on the results of this research paper.

- Paragraph 1 Art 175 provides for the adoption of a **three-year program** of public needs that are eligible to be met through forms of Public-Private Partnership. This is also intended to ensure maximum transparency to economic operators, institutional investors and to the community.

  Art 7 and 8, on the other hand, state that: “The monitoring of public-private partnerships is entrusted to the DIPE of the Presidency of the Council of Ministers, at which a special **database** is established. The Ministry of Economy and Finance, through the portal for monitoring public-private partnership contracts of the General Accounting Office of the State, shall publish and periodically update best practices on the most recurrent forms and technical characteristics regarding the financing of public-private partnership in the market.”

  It can be seen that this article goes on to identify a number of tools aimed at making PPP procedures more efficient and attractive to private parties, and is thus an amendment that goes in the same direction as the objectives of this thesis.
- Article 165, paragraph 2 of the 2016 Code, placed a **“ceiling” on the public contribution** that the administration could provide as a form of consideration, which amounted to 49 percent of the total investment cost. The imposed threshold seemed relevant to the very classification of the contract as a concession.

Instead, the new legislative scheme (Art. 165 para. 7), opt for a more balanced solution which is consistent with the European law. In fact, no quantitative limit is dictated on the public contribution, but the agreement is subject to the more qualitative risk transfer provisions set out in the preceding paragraphs of the article for the purposes of configuring the contract as a concession.

For the purpose of recording the investment On/Off balance sheet, instead, specific reference is made to the contents of Eurostat decisions.

It can be noticed that even this change goes in a direction of alignment with European regulations, and has no significant impact on the results of this research paper.

- **Project Finance: The relationship between concession and project finance has been better clarified**. The 2016 Code framed these two procedures as two separate types of contracts. The revised regulatory scheme, instead, establishes that Project finance constitutes a specific method of financing for concession contracts. The same concession contract, therefore, can be financed either in 'corporate financing' or in 'project financing'.

  Due to the peculiarities of this economic transaction, however, the regulator has reserved specific rules for project finance regarding the awarding and execution of the contract. Project Finance has thus become an 'internal' chapter in the regulatory discipline of the concession contract. The new discipline, as reflected in the drastic reduction of dedicated paragraphs, has been significantly streamlined. More specifically, in the revised regulatory scheme:

  1) All references to recreational boating (nautica di diporto) have been removed.
  2) Public-initiative project finance was eliminated, as it was deemed to be de facto a duplication with respect to the public administration's choice to hold a public tender for the awarding of a concession. The first 14 paragraphs of the existing Art. 183. were therefore deleted, as they were considered redundant.
  3) In paragraph 1 of Article 193, as was already provided in Article 183, paragraph 15, of the 2016 Code, it is stipulated that the economic operators may submit proposals regarding the concession of works or services, specifying that each proposal must contain a feasibility project, a draft agreement, the business plan certified by a financial institution, and specification of the characteristics of the service. Just like the 2016 version, therefore, there is no specific reference to the risk matrix and the PSC analysis. In addition, it was clarified that institutional investors may formulate proposals as per paragraph 1 of Article 193, subject to the need, in the subsequent tender for the award of the works or services, to associate or consortium with economic operators who meet the requirements of the tender, if the institutional investors themselves do not.

Subsequently, in Paragraph 2, it was removed the three-month deadline within which the administration was required to carry out the feasibility assessment of the private party's proposal.

Finally, in private-initiative project finance, it has been confirmed that economic operators can submit proposals with reference to both initiatives not included in the planning instruments and with reference to initiatives which are instead already included therein, proposing different ways of implementation, and it has been confirmed the pre-emption right.

It can be concluded that, with reference to the Project Finance, the reference legislative framework has been simplified by streamlining it and clarifying the role of Project Finance. Therefore, the goals and results of this Master Thesis seems to be in line with the developments arising from this new regulatory framework.

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