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Review

Revisiting the Portuguese experience with public-private partnerships

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Over the past decades, large investments have been made in energy, transportation, health, and water supply, among other public services, in order to foster economic growth and allow for better living conditions. Public budgets constraints and an inability to manage large and complex projects widened the private sector involvement in providing and managing public services, though few countries choose to completely liberalize sectors of special public interest. Until a couple of decades ago, infrastructure delivery followed traditional procurement models where the service was contracted under a list of specifications, based on a simple transaction model, with no long-term relation. Today, Public-Private Partnerships (PPPs) arrangements are the preferred mechanism to deliver large infrastructure. Portugal's experience in developing PPP projects started in 1994, in the road sector, and results have encouraged the expansion to other sectors. These projects placed Portugal as the largest EU country in PPP spending in percentage of GDP. Mistakes were made, and lessons learned. This paper addresses the development of PPP arrangements in Portugal, where several large-scale projects were developed under this procurement scheme, extracting lessons and policy implications for governments, practitioners and academics.

Key words: Public-private partnerships, infrastructure investments, Portugal.

INTRODUCTION

The world development depends on the existence of efficient and reliable networks of infrastructure and public services, like energy, transport, health, and water supply, to give a few examples (Priemus et al., 2008). Their scale brings growing complexity and demands large capital availability (Bosch-Rekveldt et al., 2010). Most of public service infrastructure are natural monopolies, and impose large costs (investments and environmental impacts) to society but also have positive externalities (e.g. time savings and access to water and energy). Due to their special role, public infrastructure and services are ultimately a government responsibility, even when provided under a market-based structure (Marrewijk et al., 2008).

While facing the challenge of decreasing the infrastructure gap, governments are exposed to an increasing pressure to cut back costs and investments in order to reduce the public deficit. There is a trade-off between decreasing the infrastructure shortage, fostering the economy, and achieving a bearable investment and operating cost. In developing countries this trade-off is even more acute due to low coverage in basic infrastructure and lower financial resources from governments. The search to achieve an optimal solution leads to a reorganization of the system. For example, when in the 80s the British Government was looking for "quick wins" to allow capital inflow, the British Airport Authority (BAA) and several utilities related industries such as telephone, electricity, gas and water were sold. Later, in the 90s, also in the UK, Public Finance Initiative (PFI) was developed as an innovative model for service provision and financing (Allen, 2001).

Procurement techniques range from traditional procurement models (public work contracts), where a pre-determined service is delivered by a private company

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to the contracting agency, in a short time frame (ranging from a couple of months to 3-4 years), to full privatization (Holmes et al., 2006). In such a case, the responsibility for the service/infrastructure design, operation and financing belongs entirely to the private sector. Even in this case, it is still a governmental responsibility to ensure that the service is effectively delivered with no disruptions or markets abuse. Empirical evidences have shown that, few sectors are able to work under such a de-regulated environment (Gomez-Ibanez, 2003). Public-private partnerships (PPPs) option has emerged to allow a greater involvement of the private sector in public service provision, within sectors traditionally monopolistic. This paper will illustrate the development of PPP projects in Portugal since the mid 90s up to today. A description of the models used and sectors involved will be briefly given, as well as an analysis of the main benefits and pitfalls identified in the Portuguese experience. Some detailed information on selected case studies will be provided to support the ideas presented.

THE DEVELOPMENT OF PPP ARRANGEMENTS IN PORTUGAL

Over the last 25 years, Portugal has undergone a major infrastructure investment program. During the 80s Portugal went through a political stabilization period after the Revolution of 1974, and the end of "Estado Novo" dictatorship. In the 90s, after the integration of Portugal in the EU, structural and cohesion funds were made available for Europe's poorest countries, allowing Portugal to have access to large capital funds. The governments' priorities were to decrease the infrastructure deficit that was retaining economic growth. This was clear in several infrastructure networks: energy, transport, and health, among others. Like many other countries (UK, Canada, Australia, Greece, Italy, etc.), the preferred procurement option for developing this investment plan was the PPP model.

The first large project developed under a PPP scheme was the second bridge over Tagus River, called Vasco da Gama Bridge, in June 2004 (Lemos et al., 2004). In fact, the first concessions given to private firms were launched in the early 70s to Brisa, and concerned highways (390 km of extension). The company was later nationalized, after the 1974 Revolution, and privatized again between 1985 and 1997 (Fernandes and Viegas, 2005). The Vasco da Gama Bridge was the first project developed under a project finance scheme. The contract was signed in 1995, for a maximum concession period of 35 years to Lusoponte, in a DBFOT (design-build-finance-operate-transfer) scheme. Between 1999 and 2001, several PPP contracts were signed: 9 for highway construction/ financing/operation and 2 for railways (heavy and light rail system) only in the transportation sector (excluding seaports). This was an intense period of PPP development, and a posteriori, it is possible to claim that the government went too far in launching, in such a short period, so many projects. First, time was not enough to consolidate know-how able to improve new tenders with the experience acquired in past projects and second, there was no legislative framework to guide new contracts, or a structured civil servant group to manage the projects. Moreover, the dominant thought was to build, as quickly as possible, and costs were not a major concern, since under the PPP model no relevant payment was made in the first years of construction. After almost a decade, the prevailing challenge was how to bear the costs. In the drinking water and wastewater collection, several PPP arrangements were launched at the retail level through concessions that were granted by local authorities (Marques, 2008), and all over time the contracts have been renegotiated with the rise of tariffs.

Specific legislation to regulate the development of PPP was only launched in 2003 (Decree-law no. 86/2003), designing a common framework for all PPP projects, namely, the design and preparation of tender procedures, contract awarding and monitoring (Marques and Silva, 2008). The projects signed before the approval of this legislative package did not have any guidelines regarding risk sharing and renegotiations. The lack of specific legislation and also of a public body able to deal with the complexity of PPP projects, resulted in the absence of accountability. Table 1 presents the major PPP projects carried out in Portugal since 1995. It does not include the PPP projects developed by the municipalities (e.g. car parks, waste, water supply and wastewater). The Portuguese legislation defines a PPP as a "contract or union of contracts, by which a private entity is bound before a public partner, to ensure the development of an activity aimed at satisfying a collective need, and where the funding and responsibility for investment and operating obligations belong, in the whole or in part, to the private partner". The rationale for developing PPP arrangements was to allow the public sector extract value from a profit oriented approach and design a financing scheme that would relieve the financial effort of investing in large sunk infrastructure (hospitals, dams, roads, etc.) (Martins et al., 2011). Experience suggested that the former was the main motive for PPP development, although most of the value of a PPP model relies on the ability to have a private management, profit-oriented, able to develop efficient solutions.

The use of the PPP model as a financing scheme led to underestimating the future annual burden. When governments were launching a project, there was no legal instrument to incorporate the annual rents for the duration of the contract into a "public balance sheet". The annual payment was a long term concern, and was not accounted conveniently. The 2008 economic crisis brought to an end the "unlimited credit". Private capital lenders have less availability to assume risks, and governments find it more expensive to sell public debt (Figure 1). The ability to launch new projects was

Table 1. Major Portuguese PPP contracts signed in the period 1995 to 2009.

	Roads	Railways	Energy	Health	Security
1995	Lusoponte				
1998					
1999	Aenor A-E Atlântico ScutVias	Fertagus			
2000	Luso Scut Costa de Prata Euroscut Norscut				
2001	Lusoscut Beiras Litoral/Alta Euroscut Norte	MST			
2002	Lusoscut				Siresp
2004	Brisal				
2005				LCS	
2006			Transgas REN Atlântico REN Armazenamento REN Gasodutos EDP (distribution)	HPP	
2007	LusoLisboa AEDL		REN (exploration)		
2008	A-E 21 AENOR Douro A-E Marão		EDP (Tua) EDP (Fridão and Alvito) EDP (Alqueva) Iberdrola (Gouvães, Padreselo,…) Lisboagas Lusitâniagas Setgas Portgas Beiragas Tagusgas	Escala Braga HPP TDHOSP	
2009	VBT SPER				

jeopardized, the reason why the Portuguese Government decided to postpone all ongoing studies for major projects: it was planning to launch in 2010 the new Lisbon Airport (a 5,000 million Euros Project), coupled with the privatization of ANA Aeroportos de Portugal (the airport manager) (Cruz and Marques, 2011) and the High-Speed Rail Network (with two lines connecting to Madrid and Oporto – 6,900 million Euros). The difficulties do not concern only the future projects, but also the payment of existing rents. After the huge amount of

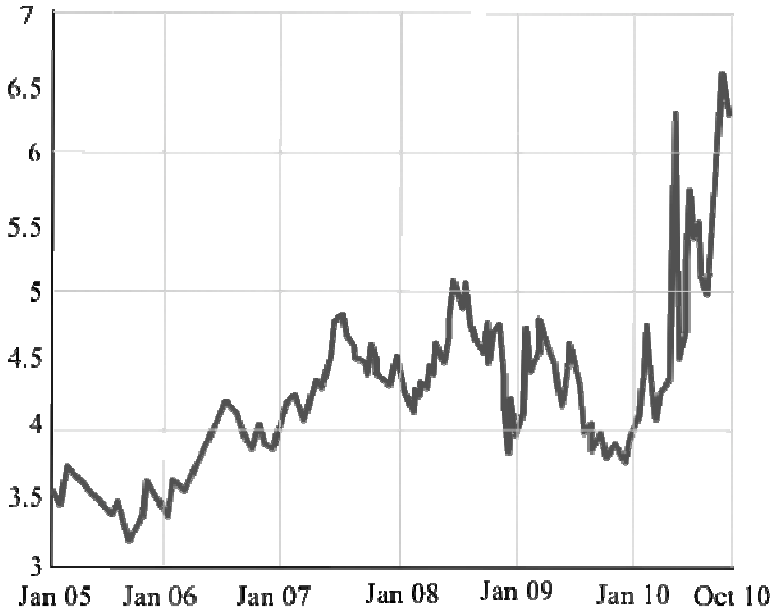

Figure 1. Portugal Government Bond (10 years Yield) [Source: TradingEconomics.com].

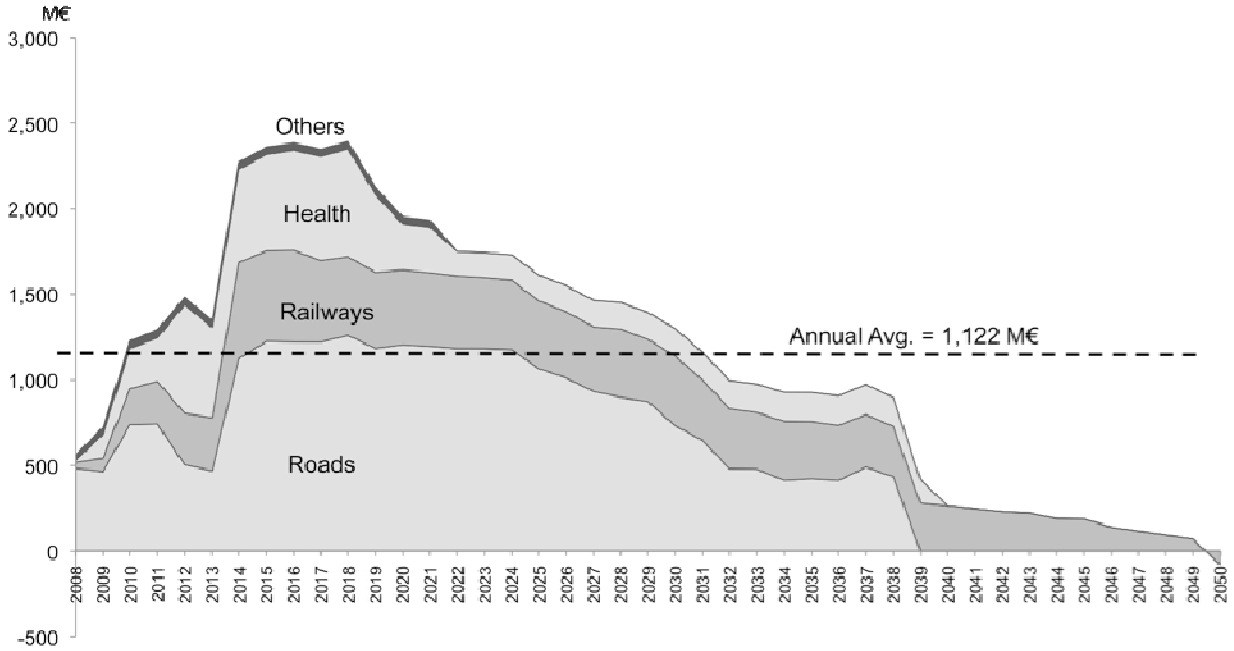

Figure 2. Annual public burden with PPP projects. “Others” include the Integrated System of Networks for Emergency and Security.

highway concessions in the first half of the 2000 decade, in the second half (2005, 2006 and 2008) several PPP projects were signed in the health sectors, whose payments will start in 2010, and will reach a maximum in 2014, when highway concessions also reach their maximum annual value (Ministry of Finance, 2010).

Figure 2 illustrates the annual burden with the PPP contracts, and provides evidence of a massive financial effort between 2014 and 2019. Considering the projects launched, for the global contracting period of 2008 and 2050, the annual average burden will be 1,122 million Euros, with a peak above 2,000 million Euros in the period between 2014 to 2019.

These projects place Portugal as the largest PPP user,

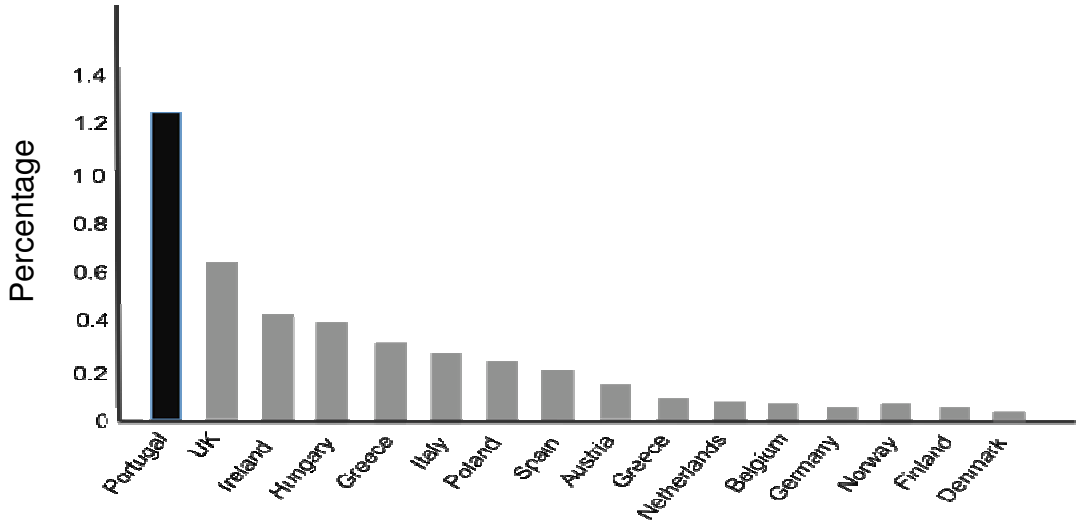

Figure 3. Average 2000 to 2005 PPP activity as a percentage of mean GDP. PPP activity is measured in investment values, not annual payment. [Source: PriceWaterhouseCoopers]

weighted by GDP, in Europe as highlighted in Figure 3. Also, if measured by EIB loans exposure, Portugal places 2nd with 19% of all infrastructure related loans granted by EIB, ahead of Spain (18%), Greece (15%), Denmark (10%), only behind the UK with 24%.

LESSONS FROM THE PORTUGUESE EXPERIENCE

The significant number of projects developed under PPP arrangements in different sectors allow for an ex-post analysis of the main benefits and pitfalls, comparing with the literature and international experiences. Case studies show that they do not differ much, meaning that there is a core set of problems yet to be solved, affecting most PPP developments across countries. More than avoiding up-front payments, PPP status of "off-sheet" balance, not accounted for public budget calculation, provided the government with the ability of performing infrastructure investments with no immediate impact on public finance. The payment would only emerge in the medium and long term. What started to be an advantage, soon transformed itself into a pitfall, since it allowed for economically unfeasible projects to go forward.

Nevertheless, this procurement model allowed for a fast development of infrastructure, which would not have been possible under direct management of the government, through traditional contracting. This was particularly clear in the construction of the highway network. Improved accessibility across the country and a decrease in travel times, as well as in road accident casualties were some of the benefits arising in the short run (Fernandes and Viegas, 2005). Also, in the renewable energy sector (wind power generation), the private sector capacity to engage in large projects and deliver, in short periods, complex projects was also evident – the production increased from 175 MW in 2002 to 3,725 MW in 2010, more than twenty times more (Martins et al., 2011). The Portuguese Government launched several concessions for the construction, financing and operation of wind farms, under a "feed-in" remuneration scheme, boosting forward wind power generation. A similar incentive mechanism was developed in India, regarding energy delivery projects, to foster the growth of production activity (Gupta, 1998), and in other developing economies (Dunkerley, 1995).

Regarding the efficiency of private management, cost overruns did prove to be less frequent under private management, attesting Grimsey and Lewis (2002) conclusions. PPP option also allowed the government to focus on maximizing social value. Public authorities' decisions and policies are subject to public opinion and democratic decision-making (Jones, 1994), which one may argue that are not compatible with an effective, "real time" management of complex projects.

The purpose of this paper, is not however, to discuss the merits of private vs. public management, but rather to extract evidence from the Portuguese development of PPP arrangements. Although several pitfalls can be identified, renegotiation of contracts is the main "Achilles heel" of PPP development, as Guasch (2004) and Engel et al. (2009) also claim. Engel et al. identified some evidence of anticompetitive behaviour and opportunism from contracting authorities. This included the lowballing of bids in tenders, accounting for renegotiations to breakeven and paying for the additional expenditure. Also, governments use renegotiations to increase spending, rents and delaying payments for the future administrations. Supporting evidence was found in

Chilean concessions between 1993 and 2006.

Case study 1: Contract extension in the Alcântara concession

Alcântara Terminal is the largest container terminal in Portugal, placed in the Lisbon Port. The concession was granted in 1985 ending in 2005, when it was extended for 10 years (two periods of 5 years each) to allow for the depreciation of additional investments. In 2009, six years before contract termination, the contract was extended for an extra 27-year period. The argument was that capacity increases where necessary, and it was not possible to wait until 2015, when the contract expired (with high investments required). In addition, as a result of the bilateral negotiations, changes were made in the risk-sharing agreement, transferring significant commercial risk to the Public Port Authority: if in the period between 2009 and 2013 demand is lower than 20% (compared with the business model) then the concessionaire can ask for the financial re-equilibrium of the concession. To illustrate the optimism bias behind traffic forecasts, the real traffic, in 2009, was already 24% below the business model scenario.

This example also shows the problems of having concessions, which imply a large investment in public works. This type of concession became more interesting to construction companies, since most of the project capital is devoted to investment funding, that is, for a profit maximization strategy, a construction company has the incentives to lowball its offer for the concession (predatory prices) because it will probably get free of charge and directly awarded, multi-million construction projects, where large profit margins can be applied well above the market, since no competition exists. The PPP project of highways in Portugal provided evidence of this type of behaviour.

The same happened with the privatization of Argentinean airports. In order to finance the large investment program necessary to upgrade the infrastructure, the Government launched a concession for airport management and operation, and the winner bid was unrealistically low (Lipovich, 2008). Several investments were planned to happen, but as economic performance downgraded, traffic decreased and the concessionaire faced financial problems. In 2007, the Government decided to renegotiate the contract, replacing the annual royalty fee, by a variable 15% fee on aeronautic and non-aeronautic revenues. Some contracts can prevent predatory behaviour by construction companies, such as the contract developed in the Light Rail System of Oporto which is described next.

Case study 2: Light rail system of Oporto

The Light Rail System of Oporto is a 59.6 Km network (urban and suburban) with 70 stations and a total investment of 2,400 million Euros, transporting 52.6 million passengers in 2009. The design-build-operate contract was signed in 1998 for a 12-year period. In 2010, two separate tenders were launched: one for the operation (5 year contract) and a second for building new extensions and maintaining the entire network for 20 years (this tender is still waiting for governmental permit). Since the service specifications were established in the tender, and demand risk was mainly in the public sector side, the key variable for awarding the concession was the compensation required by competitors to operate the system. The incumbent operator (Transdev), member of the concessionaire that first won the contract in 1998, lost the second tender with a 2 million Euros higher compensation than the winner bid (Barraqueiro 35.7 M€; Transdev 38.7 M€). To allow for this contractual scheme to work, the 72 vehicles fleet belongs to the contract grantor (Metro do Porto), that leases them to the concessionaire.

In bundled contracts of 30 years, there is “competition for the market” but not “in the market” after the construction period (Demsetz, 1968). In the operation phase, the monopolistic operator can get into a “quiet life”, generating X-inefficiency (Marques and Berg, 2010). These cases illustrate how competition can allow for the public sector to extract value from competition. The re-bidding process allowed for a 5.6% saving in 179 M€ contract. Besides, the short-duration of the contract diminishes the risk of renegotiations, making it difficult to make traffic forecasts in 30 or 40 years. Renegotiations can happen for several reasons: insufficient documentation, changes in political guidelines and optimism bias in traffic projections (this may allow to publicly presenting the projects as economically viable, and pushing forward to future administrations the onus of renegotiating contracts for the new, lower, traffic projections). Few contracts in Portugal did not suffer renegotiations, some even before starting to operate. Two of those examples are the Light Rail System of Tagus South – a light rail system in the South bank of Lisbon Metropolitan Area – and the Vasco da Gama Bridge. The Vasco da Gama Bridge is an example of how changes in political guidelines can result in compensations to the private concessionaire.

Case study 3: Vasco da Gama bridge

As presented earlier, Vasco da Gama Bridge (Lisbon) was a DBFOT (design, build, finance, operate and transfer) signed in 1995, after an international tender, with a concessionaire called Lusoponte. The contract granting exclusivity of crossings over the Tagus River in the Lisbon Area, determined that the duration should be no longer than 33 years and should be terminated when there was an integral payment of loans and the traffic volume (in both directions) equaled 2.250 million

vehicles. To balance the concession, an increase in the toll on the first bridge (25 of April Bridge) was inevitable, but in 1994, even before the signing of the contract, a large popular contestation compelled the government to decrease the expected road toll and assumed the gap in the toll for a 19-year period, starting in 2000. Other special discounts, such as 20% discount for users buying pre-purchasing books or a 50% discount after the 13th crossing, made the concession go into financial re-equilibrium. This resulted in six compensation packages being accorded between the State and the concessionaire Lusoponte. The Light Rail System of Tagus South is a project that suffered from political instability in its governance.

Case study 4: Light rail system of Tagus South

The Light Rail System of Tagus South consisted in 13.5 km of extension (19 stations) corresponding to a total investment of 320 M€. The original PPP contract established in 2002 included construction, maintenance and operation for a 30 year period. Initially, it was planned to open in 2005, but it only started to operate in 2008. This lag was due to delay by the local administration in providing the access to public space, which led to renegotiation with the concessionaire and an additional payment of 68 million Euros. Between 2002 and 2004, when renegotiations took place, 8 ministers, 3 secretaries of state and 3 project leaders were involved in the project. From the public sector side, there was a clear governance problem, which weakened the public interest when negotiating with the private sector (which is stable and builds up knowledge over time).

Political instability, lack of politicians' accountability and capture of regulatory agents by special interests (Gomez-Ibanez, 2003) are behind many processes of renegetiations and poor contract design, ultimately resulting in PPP project failure. Failure in this case does not mean earlier contract termination, which rarely occurs, but the payment of compensations by the government and a general public opinion that, PPP arrangements are an obscure "bridge" between public and private sector. This general negative perception can harm the development of successful partnerships. For example, in November 2010, when the Public Debt of Portugal reached a maximum of 6.5% interest rate in international credit markets, and the Government and the main opposition party, PSD (Social Democratic Party) were negotiating the 2011 Public Budget, PSD demanded the freezing of all PPP projects, as a condition for the agreement around the Public Budget. Notwithstanding the financial constraints that would possibly make difficult the accomplishment of some investment, the freezing of all PPP projects can have negative effects in public service provision.

Irrespective of the political causes that may lead to renegotiations, there is always the problem of uncertainty surrounding PPP projects. When establishing contracts for periods of 20, 30 or 40 years, forecasting becomes virtually impossible. Neufville and Odoni (2003) claim that "forecasts are always wrong", regarding air traffic estimation. The thesis is unquestionable, except that it is true not just in the air transport sector, but also in all sectors. Some are less sensitive to forecasts deviations, those where no competition exists, but in sectors with substitute services (e.g. different transport modes), or when operators work in a de-regulated environment (e.g. air transport) variability of forecasts tend to be high. Inaccuracy in forecast and revenue risk has been covered by the literature (Skamris and Flyvbjerg, 1997; Wang et al., 2001). This question is so important that the British Department for Transport released a guidance report to address the problem of optimism bias in transport projects (Flyvbjerg, 2004). The problem of uncertainty reveals itself in the risk sharing agreement of the PPP project. There are several types of risk, but Marques and Berg (2009), used a classification relevant for the purpose of this paper. They have divided risk into production (planning, conception, expropriation, construction, environmental, maintenance, operation, technological and performance), context risks (financing, inflation, legal, regulation, unilateral changes, public contestation and force majeure) and commercial risks (demand, collection, capacity and competition). The main issue of a PPP contract is the allocation of each of these risks. Under the pure concept of partnership there is risk sharing, and the private partner will only have the incentives to work efficiently, if it has some risk. On the other hand, risk assumption by a private agent bears a risk premium with it, as higher as the range and business impact of the risk. It is commonly accepted that the agent best able to deal with a risk should bear it (Grimsey and Lewis, 2002, 2005; Meda, 2007). Empirical evidence has shown that usually the public sector bears most of the risk. It is consensual that production risk should lie on the private sector side, while context risk is more easily tackled by the public sector. The core question is related to commercial risk.

Cruz and Marques (2010), analyzing seaport concessions in Portugal, show how, activities in a commercially based, such as the handling and storage of containers in ports, are "protected" by public authorities, decreasing the incentive for a commercially aggressive attitude from operators towards greater efficiency and market share increases. In cases where demand growth for the service does not depend on the operators' actions, but is more influenced by public authorities, economically unviable services, then it could make sense that public authorities tackled commercial risk. The case of the Portuguese Highway network is one of those examples. The model turned into a "capacity remuneration scheme" where the payment was made for the availability of the road. The uncertainty surrounding demand patterns evolution can be turned into an opportunity, since private management tend to be more pro-active when dealing

with unexpected events than the public sector. If managerial flexibility is granted to the concessionaire, significant improvements can be expected. The first PPP project developed in the health sector adopted this principle.

Case study 5: Hospital PPP

The Portuguese model, in this first wave, is quite unique. For delivering a hospital, two different contracts were signed. One was related to infrastructure building, financing and maintenance, including all the facilities related to the building itself (air conditioning, elevators, lightning, etc.), for a period of 30 years. The second contract was granted for 10 years, and includes the clinical management (all medical services and clinical procedures) plus all soft facilities (catering, laundry, etc.). Between 2005 and 2008, 5 contracts were signed in a total of 800 million Euros. The test of the Public Sector Comparator, demonstrated that, these partnerships provided "value for money", with costs decreasing between 6.2 and 17.5%.

The UK, France, Greece and Italy have developed models where only the infrastructure construction and management can be awarded through a concession. The clinical management stays within the respective National Health Systems (NHS) (Shaw, 2010; Teicher et al., 2006). The rationale for this model arises from the complexity of establishing contracts for clinical management. When the service quality is easily verified through a list of key performance indicators (KPI), an effective contract management is easily ensured, "if you can measure it you can manage it" (Svirina, 2009). Monitoring health care services can be a difficult task, and by keeping it under the NHS, risk is minimized. Nevertheless, by doing so the large driver for efficiency gains is deleted, that is the interface between clinical services and infrastructure management. The demand in health services (volume and disease patterns) is impossible to predict in the long term, as well as the technological change in medical equipments. It requires a continuing update and re-configuration, which is why it is crucial to have a specific private professional management team, dedicated to both infrastructure and clinical management.

IS PPP MODEL STILL WORTH?

PPP arrangements were and still are, valuable to public services provision. Most of the pitfalls related to these partnerships had more to do with political interference and lack of technical expertise on the public sector side, rather than with the model itself. One of them is that, even when the responsibility for service provision is transferred to the private partner, the government still retains an important role of regulation and contract management. The latter has been disregarded, with negative consequences for the public interest when renegotiations take place. Besides the asymmetric information problem, political interference and the absence of a technically supported public body to manage the contracts able to cope with the private sector natural ability to negotiate have weakened the public sector side. There are some structural changes on the contracts than can mitigate problems arising with renegotiations, monopoly position abuse, lack of competition, and that may lead to an improvement on the value for money.

Nevertheless, performance monitoring of the contract is a key issue to achieve a successful partnership. The definition of KPI's ability to monitor the whole extension of the contracted service, and performance reports may prevent, or anticipate, renegotiations. In Portugal, little attention has been paid to contract management, as most of the criticism and failure around PPP projects would have been mitigated if effective contract management was exercised. Table 2 summarizes some of the alternative PPP contract arrangements.

Regarding risk-sharing balance, all the previously presented studies have claimed that the agent best able to deal with risk should be with it. Notwithstanding its theoretical validity, its application is far more complex, due to risk diversity and high variability beneath each risk. The Public Sector Comparator (PSC) proved to be a useful tool to help decision makers evaluate risk transfer. By calculating the expected net present cost of the project, if it would be delivered by the public sector, and comparing with the private sector bids or, in a negotiation phase, with the private sector proposals, it may allow to assess the optimal risk transfer strategy. For more information on PSC calculation see Bain (2010) and Quiggin (2004). A correct assessment of the PPP alternative, and different scenarios of risk transfer, through PSC, may improve the decision making process, and therefore the global value for money of the project. The benefits of PPPs can also be leveraged, if the proposed alternatives contract arrangements presented in Table 2 are considered.

CONCLUSIONS

This paper provided an overview on the development of PPP arrangements in Portugal, in several sectors over the past 15 years, highlighting the most relevant experiences through a case-study approach. The development in Portugal of PPP projects is under intense public scrutiny. The annual burden of these projects in a climate of constraining public expenditure has led to an overall negative perception towards this procurement model. Several pitfalls can be identified, as the case studies demonstrate, but the "failure" of the pure concept behind a PPP model is yet to be proven. Political interference in contract design and renegotiation processes

Table 2. Alternative PPP contract arrangements.

Flexible duration contracts	Flexible duration contracts do not have a pre-determined duration period, but establish some rules, as the project net present value, which when achieved, terminates the contract. This allows for demand risk mitigation, by allowing the private partner to achieve a fair rate of return, without incurring in overpayments (Engel et al., 1997; Albalate and Bell, 2009).
Vertical unbundling (infrastructure and operation)	The Light Rail System of Oporto case shows how it is possible to capture efficiency through competition, by unbundling the contract. The advantages arising from a join construction and operation are still captured, since in the first years the system will be operated by the same concessionaire that built it, but the re-bidding of operation allowed the decrease of public expenditure with the project.
Public tender for all public works	Alcantara Terminal (Lisbon Port) case shows how the construction activity can overcome the business itself. The purpose of the concession is to allow the private partner a more efficient and commercially more aggressive management, increasing market share and improving the quality of service. Nevertheless, construction activities remained as the core of the concession. The obligation of public tender procedures for all relevant construction works can enhance the public sector interest.
Fair compensation and contestability of the markets	Contract termination has been a "myth" in Portugal, due to the large compensations required. Even when opportunistic behaviour is clear by concessionaires, evidence shows "a bending" of public interest, in order to keep the concession working and avoiding termination. Most of renegotiations could be far more competitive if termination could be a real instrument. Contract should establish fair compensations to allow contestability to the markets (Baumol et al., 1988), decreasing opportunism.
Transparency and public scrutiny	Monitoring of contracts, and transparency of information, allowing a greater public scrutiny, can protect the public interest could benefit from this public scrutiny (Marques and Fonseca, 2009). The principle behind this argument is almost a "sunshine" regulatory approach.
Award criteria and renegotiations	Incompleteness of contracts is unavoidable (Williamson 1976), so as renegotiations. Nevertheless, bearing in mind that they will happen, it can prevent conflicts to define contractually the rules for financial re-equilibrium. Cruz and Marques (2010) propose defining the shareholder's rate of return as an important criterion to take into account during the tender procedure, since it will affect significantly renegotiations.

Source: Adapted from Cruz and Marques (2010).

is the main reason for harming the public interest, which is contradictory since political agents should be the ultimate guardians of the society welfare. This issue is particularly relevant in developing economies which are less mature in their governmental structures, and public accounting institutions.

There is a systematic imbalance in risk sharing agreements, since most of the commercial risk is assumed by the public sector. This can be an optimal solution in some projects, where uncertainty is high, and the concessionaire does not have any managerial flexibility to deal with the variability, but is not generally valid. The success of PPP projects is intrinsically dependent on the ability to achieve a balanced risk- sharing mechanism, closely monitor the contract and concessionaire performances, and anticipating renegotiations. Even having under consideration these recommendations, the accountability of PPP actors is crucial to avoid an overspending in the medium to long term. Using PPP option as a purely financing mechanism, can have negative consequences, and expose the public budget to a long-term risk.

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