Católica Lisbon School of Business and Economics

Master of Science in Finance

Would the world be a more credible place if the Public-Private Partnerships contracts were quoted in financial markets?

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Dissertation submitted in partial fulfillment requirements for the degree of MSc in Finance, at Católica Lisbon School Business and Economics, Lisbon 2015.

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Abstract

This dissertation studies the possibility of overcoming the lack of transparency and economic misuses of Public Private Partnerships (PPPs) through financing the contracts directly with publicly traded instruments in the financial markets. Publicly traded instruments require particular conditions that would increase the transparency and credibility of the use of PPPs, representing a possible and real sustainable choice for public investment in infrastructure construction or any type of facilities for public interest purposes. This thesis documents, argues and sustains this novel approach, by reviewing the literature and looking at existing instruments that can possibly be used for this purpose. This paper also gathers an extensive sample of Portuguese and further European PPP projects, measuring the different levels of private engagement and possible listing requirements. It is concluded that financing PPPs with debt instruments, like project bonds, is a plausible and real way to combine PPPs with quoted financial securities. According to the data, it is also verifiable that in countries with more stable conditions in public finances, the private side on the PPP contract tends to be more transparent than in the countries struggling with their public finances.

Resumo

Esta dissertação estuda a possibilidade de ultrapassar a falta de transparência e a má utilização económica de Parcerias Público-Privadas (PPPs) através do financiamento dos contractos através de instrumentos transaccionados nos mercados financeiros. Estes instrumentos requerem condições particulares que irão aumentar a transparência e credibilidade da utilização de PPPs, representando uma possível escolha sustentável para o investimento público na construção de infra-estruturas ou outro tipo de projecto em que haja interesse público. A tese documenta, discute e sustenta esta abordagem, revendo a literatura existente e analisando os instrumentos actuais que podem ser usados para este propósito. Este trabalho reúne também uma base de dados de PPPs Portuguesas e, numa fase posterior, de vários projectos Europeus, medindo os diferentes níveis de envolvimento dos parceiros privados e os seus requisitos para uma possível entrada e começo de transacção em bolsa. É possível concluir que financiar PPPs com instrumentos de dívida, como obrigações, é uma maneira plausível e real de combinar PPPs com instrumentos cotados em bolsa. É também visível, pelos dados, que em países com condições mais estáveis do ponto de vista das suas finanças públicas, o lado privado dos contractos de PPPs tende a ser mais transparente do que em países com dificuldades nas suas finanças públicas.

Acknowledgments

I would like to thank my supervisor on this dissertation, Professor Ricardo Reis, who has always supported me. I am tremendously lucky to have Professor Ricardo Reis as my supervisor, because he was always comprehensive with me and constantly believed in the quality of the ideas developed in this dissertation.

I must express my gratitude to KPMG Partner, Hugo Cláudio, who has always advised and encouraged me at these first years of my professional career and for the opportunity of starting my professional path in a prestigious and demanding organization as KPMG.

Finally, most of all, I would like to dedicate this dissertation to my family, especially to my parents, to my girlfriend Alexandra and to my friends who gave me the courage to complete my master and academic track at the same time that I start my professional career at KPMG.

For all the advices, effort and support, thank you very much.

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1. Introduction

Public Private Partnerships have emerged, in the last couple of decades, as a new institutional arrangement through which it is possible to deal with a variety of key societal concerns, such as environmental improvement, regional and urban economic development and social reforms, in areas that range from education, to justice, healthcare management, etc. The huge investments that the public sector has made through these type of partnerships and the accumulated losses that have been recorded in the public finances involving these contracts transforms this subject in one of the most controversial topics in the financial and political scenario nowadays.

A frequent problem with PPP projects relates to private investors obtaining a rate of return higher than the government's bond rate, even when most or all of the income risk related with the project was borne by the public sector. These partnerships are based in a financial mechanism named Project Finance, which is a way of financing capital projects that depend for its security on the expected project's expected cash flow, rather than on guarantees from the borrower or third parties. Hence, the compensation for the private investors is frequently accused of exceeding the fair risk premium associated with debt backed by the State. Ample evidence of these accusations can be found in the media or in the national political debate on PPPs in Portugal.

A Public Private Partnership is an agreement between the public sector and the private sector with the purpose of delivering a project or a service traditionally provided by the public sector. There can be many types of establishing PPPs, but at the core of every successful project is the concept that the best value for money may be achieved through the exploitation of the private sector competencies and the allocation of risk to the party that is most capable to manage it. Another definition states that PPPs are a risk-sharing relationship based on a shared aspiration between the public sector and one or more partners from the private and/or voluntary sector to deliver a publicly agreed outcome and/or public service (Grimsey & Lewis, 2004).

The aim of this dissertation is studying the impact for all entities involved in these partnerships, if these contracts were publicly traded in the stock exchange markets. All of the financial markets have specific and strict rules of admission to trading and ongoing obligations to the issuers, being the main goal proving that this will benefit the public and private sectors. How? By increasing contracts' transparency, by attracting more private investors and decreasing the financial responsibility to dealing with the consequences of the contracts' associated risks, both sectors will profit from this different approach to

Public Private Partnerships financing. In this new approach, the market will have a more relevant role in the risk allocation, in the compensation mechanisms and in the monitoring of the PPP contracts.

The main contribution from this dissertation to existing literature relies on documentation gathered on existing private engagement in PPP contracts. This documentation is composed of a database with information concerning current contracts in Portugal and in 16 other European countries (EU and non-EU members), an analysis of the differences in private participations focused on the publicly traded status and a statistical analysis of the data to empirically support the observed conclusions.

This dissertation is structured in 4 different and distinct stages.

First, it will cover the literature review supporting the conceptual definitions regarding two essential main fields: accountability in PPPs and the initial public offering process of raising capital by companies. On a second stage, it introduces the Portuguese and European reality regarding PPPs contracts and the involvement and analysis of the private party on these agreements. The stage after it will discuss the Portuguese market requirements for public listing and if Portuguese private partners are actually prepared to be listed on the Portuguese stock market or not. The final stage of this dissertation will address the advantages and disadvantages of PPPs being listed on the stock market and will propose the financial mechanism that better applies to help matching PPPs with publicly traded instruments.

2. Literature review

In order to conduct this dissertation, it was fundamental to research some specific topics in Public Private Partnerships (PPPs), in order to clarify the concept and the current issues related with this type of agreements. PPPs are rapidly growing means of acquiring infrastructure assets and their associated services, indicating a fundamental change in the relationship between the state and the industry (Ahadzi & Bowles, 2004). Though the term public–private partnership may be understood in different contexts from country to country, it is fundamentally a way of collaboration between the public and private sectors. A classical explanation is therefore provided by the Canadian Council for public–private partnerships as: "*A co-operative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards*". The appropriate allocation of these inputs is very difficult to implement and it is one of the greatest motivations of this dissertation.

Other definitions can be scrutinized in the work of other authors. For example, at a most general level, PPPs are usually recognized as long-term cooperative institutional arrangements between public and private actors to achieve various goals (Khanom, 2010). This paper also studies if PPPs are established due to managerial/financing options, political reasons or economic development strategies. Some European authors also study this topic (see, for example, (Teisman & Klijn, 2002). These long-term cooperative institutional arrangements call for long-term mechanisms and instruments, which is crucial for the aim of this dissertation.

This search for cooperation can be seen in all levels of societal decision-making: between governmental organizations, between government and citizens, and, more recently, also between governmental organizations and private-sector organizations. This call for governance, cooperation and partnerships, however, does not straight lead to major shifts in day-to-day decision making (Teisman & Klijn, 2002). The controversial problems with the poor financial performance that have been associated with PPPs contracts for the public sector and the lack of the credibility associated ask for alternatives and innovative solutions.

PPPs as governmental tools have been around for quite long in domestic matters of highly developed states. PPPs are said to increase both the effectiveness (problem-solving capacity) and the legitimacy of international governance in terms of democratic participation and accountability (Börzel & Risse, 2002). The high usage of this type of

instrument and the huge investment values behind them can be verified by studying the Portuguese and European Partnerships contained in this dissertation.

Since they originally became fashionable around 30 years ago (Bovaird, 2004), the concept of PPPs has been strongly questioned. It has faced several sources of animosity, both theoretical and practical. From the perception of 'traditional public administration', PPPs are suspicious because they reduce political control over decision-making, while from the New Public Management (NPM) perspective, long-term partnerships may be suspicious in terms of undermining competition between potential providers. At a practical level, trade unions have often resisted PPPs, fearing these will reduce jobs and employment conditions, while citizens and service-users sometimes have expressed concerns about having service providers who are mainly profit driven. Having this into consideration, an immediate conclusion draws out — PPPs usually mean heterogeneity, not tidiness. In fact, some authors (Löffler, 1999) have gone further, suggesting that a major problem of a partnership approach to public issues is that it brings fragmentation of structures and processes, which in turn leads to the blurring of responsibilities and of accountability — as each agency has sacrificed some of its sovereignty in joining the partnership, it can also claim that the partnership, rather than itself, is the accountable body — yet there is often no direct mechanism by which these partnerships can be held accountable in a proper fashion. Creating a mechanism like the one proposed in this thesis can constitute a better way of measuring accountability in PPPs.

The accountability of each party in public private partnerships is the second issue that is important to explore in the available literature. The definition of this issue is the ability of the public side (state and citizens) to hold to account those exercising public authority over standards and the use of public funds in the delivery of services (Grimsey & Lewis, 2004). A number of different approaches used to hold organizations and their members accountable have been identified in the literature (Acar & Robertson, 1999). These include bureaucratic, political, professional, legal, and market mechanisms. Some combinations of these mechanisms are used to help insure the accountability of organizations in the public, private and non-private sectors. Attending the unique characteristics of PPPs, it is not clear that accountability mechanisms developed for use in the context of traditional bureaucratic organizational arrangements will be effective in the context of multi-sectorial partnerships. If PPPs are to be held accountable, policy makers, public and private managers may be needed to identify or develop new approaches, to ensure the successful performance of these inter-organizational networks.

Accountability in PPP´s requires the creation of proper safeguards to ensure that public services are not compromised for the sake of private profits (Boyer, Forrer, Kee, & Newcome, 2010). These authors put an analytical framework for assessing the extent to which PPPs provide (or will provide) goods and services consistent with public sector goals of effectiveness, efficiency and equity. Six dimensions - risk, costs and benefits, political and social impacts, expertise, measurement - are incorporated into a model that assists public managers in improving partnership's public accountability. It is challenging to maintain public trust in government, and perhaps even more challenging to uphold the public interest through multi-sector delivery of public services. Managing accountability in PPPs involves balancing innumerable public demands: cost-effectiveness, risk sharing, innovation, reliability, timeliness, stakeholder participation, transparency and security. All of these are incentives to a solution like financing PPPs with finance publicly listed instruments.

Partnering for policy purposes by government, commercial enterprises, and not-for-profit private organizations in the public and private sectors raises the question of how to evaluate such collaboration (Rosenau, 1999). There is a certain consensus in the policy literature supporting that the government is best at assuring a part of the contract responsibilities and the private sector the other part (Ghere, 1996). There are several kinds of partnerships (Linder, 1999). Public-private partnerships have in common a shared responsibility that impacts citizen's welfare. Real partnerships, theoretically, involve close collaboration and the combination of the strengths of both the private sector (more competitive and efficient) and the public sector (responsibility and accountability vis-à-vis society). Accountability is vital for those involved on the partnerships to perform their responsibilities, a fact proven by the substantial public disruption originated by flaws on PPPs projects.

The goal of this dissertation is studying the possibility of improving the world's perception on Public Private Partnerships, if this type of contracts were quoted in the exchange markets. For this matter, it becomes essential to conduct research on literature regarding the advantages of raising capital for companies through initial public offerings.

Most companies start out by raising equity capital from a small number of investors (Ritter, 1998). If a company grows and needs additional equity capital, it will become at some point desirable to "go public", by selling stock to a larger number of diversified investors. Once the stock is publicly traded, this enhanced liquidity allows the company to raise capital on more favourable terms than if it had to compensate investors for the lack

of liquidity associated with a privately-held company. Firms going public, especially young growing firms, face a market that is subject to sharp swings in valuations. The fact that the issuing firm is subject to the whims of the market make the IPO processes a high-stress stage for entrepreneurs. The possibility of financing PPPs contracts with a third option will decrease the amount invested by the Public and Private partners and this is one of the advantages of searching for another financing mechanism and more concretely, a listed instrument.

For example, an entrepreneur holding a technology that requires continuous investment obtains the initial financing from either public markets (he can perform an Initial Public Offering) or private markets (he can sell stock to either a venture capitalist or a consort). His choice of financing will be determined by the cost of the initial capital, which will depend on his liquidity and on how his choice will affect future capital allocation choices. Usually there is a great advantage associated to public financing, if obtaining diverse information is costly and if investors are able to receive valuable information at no cost (Subrahmanyam & Titman, 1999). This is one of the advantages that will increase the credibility of PPPs contracts, through the necessity and obligation to publish financial information.

The decision of going public is one of the most important topics in corporate finance (Pagano, Panetta, & Zingales, 1995). The common sense is that going public is simply a stage in the growth process of a company. However, there are big companies that are not publicly listed and whose capital is still in the hands of institutional shareholders. This can even be seen in big economies like the United States of America, Germany or other European countries. The sector, the economy or the country are variables that can affect the decision of going public or not. Going public is not a stage that all companies must mandatorily go through, but something they can do if they want to. Larger corporations are more likely to go public and it is also true (Pagano, Panetta, & Zingales, 1995) that the Initial Public Offering tend to make companies grow faster and become more profitable. This is also a motivation associated to this dissertation and to this study.

Some authors (Mello & Parsons, 1999) support that when a firm goes public, the large volume of new shares sold, as well as the volume of existing shares transferred to new owners, lastingly shapes the firm's ownership structure and thereby influences the firm's value. To maximize the revenue raised from the shares sold in the public offering, it is important to design the sale of new shares with the final ownership structure in mind. This is a critical topic for this dissertation. The IPO is a good way to sell dispersed

shareholdings to small and passive investors, but not a good method for selling company control. This is one of the topics that will be covered on this dissertation: the structure of the contracts' ownerships and the entities created to manage the public-private partnerships' deals, between the public and private sector.

After reviewing the literature on how to raise capital through an initial public offering, it was important to search for literature regarding corporate debt financing.

Debt financing is an alternative way to raise capital and maybe a more suitable option for PPPs. The building of the financial capacity of a company depends on the financing strategy it choses: debt and/or equity. In the class of debt securities, companies classically make another choice: mainly public against private debt. Even considering private debt, an organization has the choice to borrow from a bank or a non-bank intermediary. There's some literature that states that highest-quality firms will issue public debt, medium-quality firms will borrow from banks, and low-quality organizations will issue public debt, as long as the bank's operation cost is compensated by the profits (Pinto & Santos, 2015). This is a choice that will be analysed at the final chapter of this dissertation.

3. Data description and analysis

The next chapter presents data analysis that will support this dissertation. Firstly, Portuguese PPPs will be analysed with focus on the private partner side. By analysing the last report of the *Direcção Geral do Tesouro e Finanças* (DGTF) regarding PPPs, it was possible to assess all contracts according to partnership nature and investment made in each contract, and the aim was verifying if the private partners were publicly listed at the Portuguese stock exchange. After this analysis, the same was made to 16 different European countries: Poland, Russia, Slovakia, Croatia, Greece, Italy, Spain, Turkey, Belgium, Denmark, Finland, France, Germany, Ireland, Netherlands and the United Kingdom (UK). The data that will be presented was found in the Partnerships Bulletin website (Rockcliffe Ltd, 2015). The Partnerships Bulletin is a magazine and a website providing in-depth updates on partnerships established between the public and private sector to get, build and manage public structure. Each hard-copy edition of Partnerships Bulletin (International) includes news, interviews with the top industry personalities, in-depth market reports on partnership sectors and industry articles from specialized authors covering topics related to transports, waste, education, healthcare, housing, courts and leisure. Furthermore, the magazine comprises a Business Leads segment – handing out information about projects before they are even promoted.

It is fundamental to state that the data and the conclusions retrieved were based on this source and possibly not all the universe of PPPs in the above mentioned countries were taken into account. It is also important to make a clarification for the United Kingdom partnerships. There are a huge number of contracts in the United Kingdom and it was impossible to analyse all of them. For the purpose of this dissertation, the criteria for filtration were the partnerships with national impact. The other assumption made for the UK analysis is related to the total of investment of the partnerships. The information on the Bulletin relating to the UK was presented in British Pounds. In order to make a possible comparison and analysis between countries, all the values were converted in euros, assuming the exchange rate on British Pounds/Euros observed on the 1st of July of 2015. The reason the previously mentioned date was chosen was to provide a more realistic and actual perspective. This is also a limitation of the study because the exchange rates are volatile, which will obviously affect the outcome of the analysis.

One last fact that is important to mention before starting to present the data and the conclusions of these analysis, is expressing the criteria to define if a company is publicly listed or not. At first sight this seems to be a quite simple process, although there are some

specific situations that are necessary to state: companies that were specifically created for the purpose of a PPP and are owned by a quoted firm, are hereby assumed as Non-Quoted firms. On the other hand, affiliate companies that were not specifically created to manage PPP projects, were treated as Quoted firms. Consortiums with several private partners with at least one private quoted company were treated as Quoted.

3.1 Analysis of the Portuguese Public-Private Partnerships

The next chapter of this dissertation aims at discussing the Portuguese contracts until 2012. The full table of contracts that are in a management phase can be observed in the Annex 1. It can also be observed if the partnerships' private partners are actually quoted in the market or not. By looking at the table presented below, it is possible to assess all the Investment made until 2012 for these type of contracts and understand, according to Annex 1, the total amount of investment made with quoted companies or subsidiaries controlled by quoted companies. In this first part of the chapter, only contracts in a management phase were analysed.

Insert Table 1 here

It is possible to conclude that only 33% of the total investment was made with quoted companies and only in the Energy and Transportation sectors. In the Environment and Energy sector, celebrated contracts involved EDP (*Energias de Portugal*) and REN (*Rede Eléctrica Nacional*) (both companies itself or subsidiaries controlled by these companies). EDP and REN were public quoted companies until 2014 (both have been being privatized since 2012).

Brisa also celebrated contracts in the Transportation – Road sector (with an investment exceeding 3 billion of euros). This company stopped being quoted on the market in 2013 when acquired by Targus, a company controlled by the José de Mello Group. For the purpose of this dissertation Brisa was considered as a quoted company, since at the moment of the contract's signature it was still a public traded company.

It is important to further investigate this subject and to seek reasons about why this firm left its publicly traded company status. The main goal of Targus' public takeover bid was removing Brisa from the stock exchange. The decreasing value of Brisa's shares, which had been given as collateral to a several number of the company's loans, had a significant impact in the coverage ratio of the guarantees of these loans and the banks demanded new negotiations with the purpose of reinforcing their credit's assurances. The only option was

changing into a closed capital company, on which the company's shares value would not be dictated by the markets, but by a private report. So, the new owners of the company, chose to change into a less regulated and controlled situation. The requirements for quotation are analysed in the chapter 4 of this dissertation.

Changing the scope of the analysis, for instance, checking if the percentage of the number of contracts were higher with quoted than with not quoted, it is possible to state that that percentage is even smaller. Only 8 contracts (a percentage of 12% in a total of 67) were made with quoted companies that are above mentioned. It is obvious that the Portuguese scenario indicates a small percentage of contracts (whether analysing the total investment made or the total number of contracts) that were signed with quoted companies.

Now, that PPPs in a management phase were analysed, it is important to evaluate the contracts in a construction phase. Repeating the same process by looking at Annex 2, it is possible to conclude that the tendency has slightly changed.

Insert Table 2 here

The percentage of the investment made in these contracts has increased to 38%, mainly because of the contracts in the Energy sector. EDP has signed recent PPPs contracts to explore dams and it can also be seen that some Spanish companies like *Iberdrola* and *Endesa* (quoted in Spain) also signed contracts, using its subsidiaries in Portugal, with the Portuguese Government and public sector. These two companies are the only that are quoted abroad and outside of Portugal.

The total number of contracts in construction phase in Portugal is 17. There are a total of 5 contracts with a quoted private partner, amounting for 29 % of the total of contracts.

3.2 Analysis of the European Public-Private Partnerships

After studying the Portuguese market it was important to make a comparative analysis with other European countries and to check the number of private partners and consortiums that are quoted in the correspondent stock exchange. The Annex 3, based on the Partnerships Bulletin website, contains the full analysis of the partnerships.

The conclusions drawn from Annex 3 were shortened in the table 4. Starting with a more specific scope on each country it is observed that, in a first instance, Belgium and Croatia have a very similar situation – 47% of the total investments in PPPs were with private partners quoted in the financial markets. The main contributor for these percentages is

the construction's sector player Eiffage. In Denmark, Finland, France and Germany, all countries with more stability in the political and economic scenarios, it is easily observed that these percentages are much higher. This allows concluding that political and economic stability is positively correlated with the percentages of investments made on a country. This fact is actually an important conclusion of this dissertation.

In France and in Germany, the presence of huge and top companies, such as Vinci, Boygues, Eiffage and the German consortium Hochtief are the top private partners present on these partnerships and leads to high percentages of quoted companies. In the other hand, Ireland and Greece analysis shows the opposite. The two intervened countries by the *Troika* (European Union, International Monetary Fund and the European Central Bank) have lower percentage of investments in PPPs with private partners quoted in the financial markets – 37%, slightly above of the Portuguese scenario covered in the last chapter. In Italy and the Netherlands the percentage is even lower – only 20% of the total investment is "quoted". In Poland, Russia, Slovakia and Spain the percentage is higher than 70%, with special focus in the contracts signed with the Aktor consortium and with Gazprombank (owned by oil's sector huge player Gazprom).

Insert Table 4 here

Finally, the last analysis regards the United Kingdom situation. The UK has factually been one of main PPPs markets worldwide. However, within the UK, PPPs have been used in very different ways and at diverse levels of intensity. Considering the limitations previously mentioned and the assumptions created for this specific market, the UK presents the largest share of the PPPs analysed in this dissertation for the European continent (35%). It is noticed that, whether in number of contracts or in total investment, the percentage of quoted situation is marginally above 50%, strengthening the idea that countries with a higher stability have a highest percentage of private partners quoted in the financial markets.

3.3 Hypothesis development, descriptive statistics and data empirical analysis

This section provides a statistical analysis of the data described in the previous chapter. The sample was created with the data referred to Portugal and to all the European countries mentioned before, making a sample with 239 observations. Before starting the discussion of the descriptive statistics, it is necessary to state that all the tables and figures regarding this part of the dissertation are available in the Annex 4. The aim was to study the dependence of the private nature of a PPP contract (the dependent variable, *Yi*), on

explanatory variables. The private nature of the PPP contract is measured through a dummy variable taking the value 1 if the PPP private partner is publicly listed in financial market, as defined earlier in this chapter. For the empirical evidence, logit regressions were built. The model tested by these regressions is presented in the following equation:

$$Yi = \beta 0 + \beta 1\, Investment + \beta 2\, EnvironmentEnergy + \beta 3\, Healthcare + \beta 4\, Transportation1Road + \beta 5\, Transportation1Railway + \beta 6\, Date + \beta 7\, Length + \beta 8\, Public\ Finances + ei \quad (1)$$

The explanatory variables that will be used in this regression model are based on the information that is possible to get from Annexes 1, 2 and 3 and are described in the following points. These points also formulate the hypotheses to be tested in the regressions:

- $Investment$ – This variable measures the amount of investment in each PPP project. The source for this variable is PPP Bulletin website, extracted by hand, for all countries, including for Portugal with the investment values validated by the corresponding Portuguese Finance Ministry information.
  The inclusion of this variable in the model is explained with the necessity of checking if the total investment of the projects are related with the quoted status of the private partner. The relation between level of investment and *Yi* is expected to be positive. Projects with a bigger level of investment are more likely to be associated to a private publicly traded company, since these companies will have the breadth to undertake larger projects.
- $EnvironmentEnergy$ – This dummy variable takes the value 1 for projects in the Environment or Energy industries. This variable along with the next 3 dummy variables, allow the categorization of the observations into 5 categories. The categorization is designed by the author. The residual 5th category is *Other Infrastructures*, and includes social public investment in areas like education, local public services, defence, justice, etc. This residual category will be mostly dealing with smaller more niche-like projects, usually involving smaller private partners.
  The projects connected with these industries usually are related with the construction and exploration of dams or power plants, which are projects that are also more likely to be linked to a the larger national and international energy conglomerates. Most of these are quoted and, hence, the relation between this variable and Yi is also expected to be positive.

- $Healthcare$ – This variable is yet another industry categorization variable, taking the value of 1 for healthcare related projects. Again it is expected to observe a positive relation to Yi, since private healthcare partners are expected to be more likely quoted.
- $Transportation1Road$ – This variable is also linked with the industry of the partnership and was treated like a dummy variable. The predictable results are also very clear. Highways and national roads are colossal investments associated with the top construction players in the market as was referred before in this dissertation. This top construction players are quoted companies and the expectation is that this variable will be significantly positive to explain the model created.
- $Transportation1Railway$ – This variable was treated like the previous variable. The expectation is these projects are also linked to quoted companies in the railway construction and operation industries.
- $Date$ – This variable is related with the signature date of the projects. The predictable results are connected with a bigger involvement of publicly traded companies in the projects that were established more recently, justified with the continuing increase of quoted companies in the PPP markets. The inclusion of this variable hints at the fact that PPPs projects are gaining recent visibility in larger companies and hence should more frequently be seen associated with quoted firms.
- *Length* – This variable is related with the duration of the projects. Projects with a bigger duration and involvement are more attractive for the bigger companies, like the quoted companies.
- *Public Finances* – The last variable in the model is related with the public finance situation of the 17 countries in sample. The information regarding public debt level of percentage of each country's GDP. The values used can be observed in the Table 5 of the Annex related with this chapter. The values were taken from Eurostat, World Bank, IMF and OECD public finance databases and cross checked for inconsistencies.

  Data limitation forces the use of a single most recent (2012) data point per country. As such, this variable ends up serving as an order scale for the different countries, since all observations relating to say Portugal will be assigned the same *PublicFinances* value, regardless of the date of signature.

  The expected results are linked with a bigger association of private publicly traded companies with projects in countries with a better economic and political scenario. On the other hand, partnerships located in a country with a poor financial situation (with a big level of public debt) are more likely to be signed with companies that avoid the scrutiny of heavily regulated stock markets.

All variables used in this first logit model were tested for the standard correlation and multicolinearity procedures, which can be checked in Table 7. The Box-Tidwell test for nonlinearity was also performed and the results validate the use of the binary logit regression for this model.

Insert Table 8 here

After running the first model, the results in Table 8 validate the hypotheses for *Investment, Date, Length and PublicFinances.* Noticeable is the fact that the most significant explanatory variable is indeed *PublicFinances*, confirming the suspicion that in countries in dire financial situation the private partners engaging in PPPs are shielded from the scrutiny and turbulence of being listed in stock markets. Countries like Greece and Portugal, with a weak public finance situation, have more contracts with non-quoted private partners avoiding clear and transparent mechanisms like capital markets.

EnvironmentEnergy and *Transportation2Railway* dummies are not statistically significant, indicating that there is no particular difference in the level of quoted private partners in the PPPs for these industries in comparison to the residual category.

Where the results contradict the formulated hypothesis is when it comes to the Roads and Healthcare industries. In these industries, the statistical significance goes in the opposite direction of the expected sign. This means that the likelihood of having quoted private partners in these industries is less than in the residual category.

Having established that the magnitude of the investment in the projects and the situation of the public finances are determinant to explain the private nature of the PPP partner, it is plausible that issues like the maturity and size of the financial markets in the individual countries may also play a role in this model.

As such a further hypothesis relating this issue was developed, namely it is likely that in countries with larger more active financial markets will have more quote private partners in PPPs. As such a new explanatory variable also country level defined was added to the model, resulting in a second set of regressions.

Insert Table 9 here

The variable *MarketCapitalization* refers to the market capitalization of the correspondent country stock market. The information and sources to address this variable can be found

in Annex 4 – Table 5. In a sense this is yet another order of countries, now sorted by order of magnitude for the studied countries.

The results can be observed in Table 9, but there are several problems with this particular variable. First of all, the variable is not significant in the regression. The second problem is the correlation of this variable with $Transportation1Road$. Thirdly the Box-Tidwell test also detected a non-linearity problem with the Market Capitalization.

These problems lead to the replacement of the *MarketCapitalization* variable with an instrumental variable measuring market capitalization using the rank order of the countries rather than the dollar value (*MarketCapitalization_A*). This leads to model 3.

Insert Table 10 here

Again here, the variable is not significant and the correlations problems remain. This lead to the dismissal of the hypothesis altogether.

Another concern raised in this study is the prevalence of a few larger players in the PPP scene. It is a commonly known fact that the larger French construction conglomerates are quite active in the European PPP industry. As such it was hypothesis that these companies may be conditioning some of the results. Individual dummies for the projects in the sample involving 3 of these companies (*Vinci, Boygues and Eiffage*) were added and a 4th version of the logit regression was run and a final run was made in a 5th version with a dummy gathering all 3 companies in one (*BigFrench*)

Insert Tables 11 and 12 here

The results to each new added variable are quite disappointing, none of each being nearly significant, both in the individual and in the aggregated versions tried.

After these conclusions, this dissertation will give more emphasis on the Portuguese scenario and more materially on the private partners.

4. Introduction to trading on the stock exchange – Portuguese example

It is important to look deeper into the regulatory conditions for trading on the stock exchange market and also on the Portuguese situation. By analysing the Securities Code that regulates the Portuguese exchange market, it is fundamental to make reference to the articles for the admission to trading. The Code is available on the CMVM's website (*Comissão do Mercado de Valores Mobiliários* – the Portuguese Securities Market Commission, also known by its initials "CMVM").

The CMVM is an independent public institution, with administrative and financial autonomy and was established in April 1991, with the role of supervising and regulating securities and other financial instrument markets (traditionally known as "stock markets"), as well as the activity of all those who operate within those markets. The CMVM generates its income from supervision fees charged for its services and not from the General State Budget.

Legislation and the matter of admission to trading is regulated in Tittle IV - Trading, Subsection III - Admission to trading in Articles 227 to 251 of the Securities Code. The first article worth highlighting is Article 228 – Admission to the official market. This article states that the issuer of securities that intends to go public and be admitted to transaction in the exchange market must meet the following requirements:

- Being operating on the market for at least three years;
- Having disclosed, under the law obligations, their management reports and annual results for the three years preceding of the admission's year;
- If the issuer has resulted from a merge or demerge, the requirements set in the previous paragraph are satisfied, as long as it has been operating for at least 3 years.

The second article worth emphasizing is Article 229 - Admission of shares to trading on the official market. This article declares that the only equity capital that will be admitted to trading on the official market quotation has to fulfil the following conditions:

- A proper dispersion of capital, observed at the moment of admission to trading;
- Expected market capitalization of at least one million euros; if the market capitalization cannot be determined, the capital of the society, including the results of the last financial year, is at least a million euros.

The second important statement in this article assumes that there is an adequate degree of dispersion. This happens when the traded shares are spread on the market, on a proportion of at least 25% of the subscribed capital represented by the class of shares.

The next articles that are important to consider in this analysis are the Articles 245, 246 and 247 – Annual Financial Report, semi-annual and Quarterly Information to the market. The first announcement in Article 245 that is important to highlight is related to the entities referred as issuers of securities quoted in exchange markets. These are forced to disclose within four months from the closing date of the exercise and to keep available for the public for five years, the following reports and information:

- The management report, the annual results, the legal certification of accounts and other responsibilities required by law or regulation documents, that have not been submitted for approval in general assembly;
- An audit report conceived by an auditor registered on CMVM;
- Statements of each responsible of the issuer entity, whose names and functions should be clearly indicated, ensuring veracity and authenticity of the information specified in the first point of this article, prepared in accordance with the applicable accounting standards, providing a truthful image of the appropriate assets and liabilities, financial position, results of the issuer and the entities included in the consolidation when appropriate, and must also report accurately descriptions of the business evolution, performance and position of the issuer, containing a description of the main risks and uncertainties it faces.

This annual report has to provide the following information:

- An opinion concerning predictions about the evolution of the business and the economic and financial position, contained in the documents referred before.
- Documents validating the legal certification of accounts, if these were not required by another statue or if a CMVM auditor did not validate these.
- If the annual report and accounts do not provide an accurate situation of the assets, financial situation and results of the company, the CMVM has the power to ask for further explanation and information.
- The documents are comprised within the report and the annual accounts are sent to the CMVM as soon as they are made available to shareholders.

The issuers admitted to trading on a regulated market located or operating in Portugal, disclose in their annual report, in a special chapter created specifically for that purpose, a detailed report on the structure and practices of corporate governance, containing at least the following elements:

- Capital structure, including the different classes of shares, the type of shares that are not admitted to trading, the rights and duties of these and the percentage of capital represented by each category.
- Any restrictions on the transferability of shares, such as clauses related to the trading itself or restrictions on the ownership of shares;
- Identification of shareholders with special rights and description of these rights;
- Any restrictions on voting rights, such as limitations on its exercise, depending on the ownership of a number or percentage of shares or deadlines for exercising the right to vote.
- Any type of agreements that are known to the company and may result in restrictions on the transfer of securities or voting rights;
- Statutes governing the appointment and replacement of members of the administration.
- Powers of the Board of Directors, particularly concerning capital increase;
- Main elements of the internal control systems and risk management implemented by the company, regarding the financial reporting process;
- Structure and description of the issuer's Executive Board government process, as well as any committees that are created by them for management purposes.

The article 246, Semi-annual Information to the market, states that the issuers had to disclose two months after the closing date of the first semester of the fiscal year, a management report that has to be publicly available during the next five years and has to disclose the essential information that was stated in the past articles. The article 247, Quarterly Information to the market, states that only the issuers that exceed the following limits, for two consecutive years, have to disclose quarterly information:

- Total of Balance Sheet: 100.000.000 € (Euros);
- Total of Net Sales and Other Income: 150.000.000 € (Euros);
- Number of employees on average, throughout the year: 150

5. Are the Portuguese private partners, that signed PPPs contracts, prepared to be quoted in the market?

The next chapter of this dissertation intends to investigate the possibility of private Portuguese partners going public and being admitted to quotation and transaction, on the public stock exchange.

The first topic that needed to be observed related to the minimum requirements that a company has to fulfil, in order to be accepted on the Portuguese exchange market. The previous section of this dissertation provides an extensive analysis of the Portuguese regulation, being possible to conclude that any ordinary company in Portugal has to meet the following minimum requirements to be public and quoted on the Portuguese market:

- Any firm aiming to be public in Portugal, has to have, at least activity in its last 3 years;
- Any company that wants to be accepted to trading in the Portuguese stock exchange needs to have disclosed annual financial reports for at least the last three years of activity;
- Any organization wanting to be public in Portugal has to disclose semi-annual financial reports for, at least, the last three years of activity;
- Any corporation that wants to be accepted to trading in the Portuguese stock exchange has to have an appropriate degree of shares' dispersion on the market (at least 25% of the shares' capital);
- Any company that wants to be public in Portugal has to have an expected market capitalization of at least 1.000.000 € (euros);
- Any firm seeking to be accepted to trading in the Portuguese stock exchange has to have its financial statements audited by a CMVM registered auditor.

From Annex 5, a shorter table was built containing all Portuguese companies involved in PPPs projects, observing if these met the above mentioned requirements to be publicly listed on the Portuguese stock exchange market.

Insert Table 3 here

By analysing Annex 5 and Table 3 it is possible to draw some very clear conclusions about the current situation in Portugal. It is observed that all companies had more than three years of activity and this is obvious when looking at Annexes 1 and 2, since it is possible to see the partnerships' starting dates and to verify that these companies were created before 2012 – date of *Direcção Geral do Tesouro e Finanças* (DGTF) last report. Considering

this specific criterion, all Portuguese private companies are prepared for going public on the Portuguese stock exchange.

The second condition to admission is verifying if firms are disclosing the annual financial reports for the last three years. For this criterion, only 15 companies disclose the requested annual reports, 14 at a management phase. Among these companies, 21 do not have available information, hence not fulfilling a needed requirement. Consequently, the other criteria for these 21 companies could not be assessed. None of these companies have an available website to share information, which is a concern and a risk for the transparency of the partnership. It is important to mention that for this criterion it was considered the 2014 report, since some companies have not yet published their 2015 document.

The next requirement evaluated is the divulgation of semi-annual reports. Only the publicly traded firms are obligated to fulfil this criterion, so it is relatively normal that only 4% of the population is complying with this condition. The same conclusion is observed for the appropriate degree of shares' capital dispersion. A significant number of these private partnerships are held by the *Empresa Geral de Fomento S.A.* (EG) on a percentage that grants it a controlling position (51%), while Municipalities control the remaining 49%. *EGF – Empresa Geral do Fomento, S.A*. is an *Águas de Portugal (ADP) Group's* sub-holding firm in charge of ensuring the management and recovery of water waste, through politics of environmental and economic sustainability and support, to improve the environment's quality. 11 concessionary companies, in partnership with EGF and the Municipalities, support the management of water waste treatment and recapturing systems. These companies process around 3.7 million tons of municipal solid waste (MSW) a year, serving about 60% of the Portuguese residents living in 174 Municipalities. *Águas de Portugal (ADP)* is also in charge of managing these partnerships with the Municipalities.

The next requirement that was verified relates to the market capitalization of these firms. For the companies whose financial reports were available (all those having published public information) the Share Capital was greater than 1 million euros. The other 21 companies do not have available information on this matter.

The last criterion that needs observation is if a registered CMVM auditor audited the financial statements. The analysis outcome was the same of the last criterion, this is, all companies meeting the market capitalization requirement have financial statements audited by a CMVM auditor.

Regarding the analysis made by observing the Table 3 and Annex 5 of this dissertation, it is possible to conclude that from all the mandatory requirements, there is only a single one that all with no exception fulfil. Multiplying the number of criteria for the number of companies observed, a total of 288 requirements were analysed. From these, only 106 (37%) are actually complying with the required standards.

6. Advantages and disadvantages of being quoted for the Public-Private Partnerships contracts

This chapter of the dissertation discusses the advantages and disadvantages of Public-Private Partnerships contracts being quoted in the public financial markets. It is important to keep in mind the definition of PPP. The advantages are numerous, but there are also aspects to be improved for both private and public sectors. The general population also benefits also benefits from these partnerships. The pros and cons of PPPs contracts will be at the core of this dissertation support. Being quoted in the financial exchange markets will highlight the advantages and will diminish the disadvantages of PPPs.

Addressing the advantages, the first utility of this type of agreements are the investment decisions under PPPs contracts (Tan, 2012). These contracts tend to be based on a long-term basis, rather than sort-term. Typically, PPPs contracts last for more than 10 years, which can easily observed in Annexes 1, 2 and 3. This long-term partnership will be crucial for quotation matters and will increase the stability, the purpose and the foundation of the agreement. This will influence the definition of the financial quoted vehicle associated with the PPP.

The next discussed advantage relates to the risk management of the partnership (Tan, 2012). The risks and effort are moved to the party that is best capable to succeed at it, at the lowest budget, providing great significance for the partnership and reducing the risk of failure and poor administration of the consortium. Another advantage of the PPPs is associated with the investment of the public component of the partnership (Tan, 2012). Improving the public sector's abilities to meet the continuous and demanding needs for infrastructure progress is also related and fundamental to the economy of each country. PPPs can have an important role to regulate these needs, by creating an expansion in the economy, helping countries to become more competitive in terms of infrastructures, as well as giving a boost to the industry related to infrastructure evolution (PPP in Infraestructure Resource Center, 2015). These types of projects go over competitive cost estimations procedures, meaning that the price of public facilities is benchmarked alongside market values and this will dictate all the investment to be made on the partnership.

The timings and costing in these kinds of partnerships tend to be better ensured and consequently carry better *value for money*. This latter is one of the most important indicators to analyse PPPs performance. For the success of a PPP, it is critical to make

accurate predictions for project's future cash flows (PPP in Infraestructure Resource Center, 2015). The payments to the private sector in PPP projects are typically connected with performance, creating motivations and productivity (Tan, 2012).

The cross-transfer of public and private skills, understanding and know-how, can also generate modernization and effectiveness (Tan, 2012), conferring power to this type of association. Applying PPPs as a technique of increasing local private sector skills through cooperative risks with large global corporations, as well as sub-contracting services from resident firms in areas such as civil and electrical engineering projects, services management, security facilities, housework services and preservation of amenities are examples of the constructive synergy that can be created through this type of consortiums (PPP in Infraestructure Resource Center, 2015).

The private sector frequently has a larger constructing ability, aptitude and resources than the public segment, instigating this predominantly sector to provide results within the expected deadlines and within reasonable and budget prices (Tan, 2012).

However, there are also some topics that will influence the financial quoted instrument related to Public-Private Partnerships that need to be improved. The possibility that has been discussed and studied over this dissertation will decrease these potential risks associated with PPPs.

The first aspect to consider is an alternative point of view of one of the advantages that was mentioned above, relating to the number of parties involved and the duration of their relationships in these contracts (Tan, 2012). This specific situation usually results in complicated agreements and difficult discussions and consequently high transactions and legal charges. Most of the PPPs agreements can take years to be completed. The transactions and legal costs will increase the total amount of investment of the partnership for both sectors. Considering the long-term nature of these projects and their complexity, it is hard to identify all types of contingencies that may appear during the project's expansion. Unexpected situations may appear during the projects. It is much more likely to see the parties having to renegotiate the deal during the partnership than not. It is also possible to observe some projects ending prior to the expected duration of the plan, for a different number of reasons, including changes in government strategy, a failure of the private and/or public sector to fulfil their responsibilities or due to external circumstances, like the global economy situation. Although some of these matters may be predicted in the PPP agreement, it is likely that some of them will need to be addressed throughout the project (PPP in Infraestructure Resource Center, 2015).

There is also a threat represented by the possibility of the private partner becoming insolvent or, on the other hand, making larger profits during the progression of the project – this can also generate political complications for the public sector, being the Portuguese situation one of the finest examples of this (Tan, 2012). Concerning debt, there is always an issuing cost and, although the private sector has better access to funding, the investment will only be accessible while the operating cash flows of the established project are passible to offer a return on investment, which roughen negotiations and the partnership (PPP in Infraestructure Resource Center, 2015).

It is easier to study projects, potentials assignments and synergies in some situations than in others (i.e.: recognized technology being involved in the project; the level and extent of private sector demands).

There are some projects that can be diplomatically or socially more stimulating to present and implement than others - mainly if there is a reluctant public workforce that is afraid of being reassigned to the private sector; if it is mandatory to have higher rates are to make the venture feasible; if the partners have concerns relating to migration; etc.

Private companies (and their investors) will be aware of major threats outside their control. If they face these situations, then the deal's value will take them into account. The private sector will want to ensure that it gets paid for all, no matter the situation that may come up – consequently, encouragements and performance requisites need to be explicit in the contracts (it must be tangible and easy to assess by reading the terms).

One topic to be taken into consideration is the fact that the public administration's responsibility becomes higher – voters will keep appointing the government as the main responsible for the right usage of the facilities.

The private sector is expected to have better resources, which after a short period of time, is likely to grant it a better perspective and understanding on the project's data and issues related to the assignment. It is crucial to guarantee that remain clear and comprehensive reporting necessities forced on the private operator to condense this latent disparity.

A clear legal and regulatory framework is crucial to achieving a sustainable solution. It is noticed that the minimum requirements for being quoted that are previously analysed will not only increase the credibility of the partnerships, but also will regulate and decrease the disadvantages of PPPs contracts. The obligation to publish annual and semi-annual

mandatory financial reports and having financial statements audited by the best available private auditors, will increase the integrity of the partnerships.

7. A financial quoted instrument to fund the Public-Private Partnerships contracts

This dissertation studies the possibility of Public-Private Partnerships being quoted and available to trading in the financial markets. But how? Which should be the type of financial instrument associated with this type of partnership? If the choice is financing the PPP contract with an equity instrument (shares), for example, will both private and public partners want to share their benefits with a third party? And with the term of the partnership, what will happen to the investors that bought the equity instrument? How will the investment be recovered? The potential lot of interested investors includes local financers, the host government, the granting entity, other interested governments, institutional investors and bilateral or multilateral administrations. Stockholders will want to delay their equity investment decision as late as possible during the construction period of the contract, in order to cut costs and increase their equity profit (PPP in Infraestructure Resource Center, 2015).

There are some issues that are decisive for the type of instrument that this dissertation defends, concerning PPPs' contracts funding. Regarding the uncertainties posed in the last paragraph, it will be easier for the market to understand and accept the debt instrument as a bond. Conceptually, debt can be achieved on many ways, including banks, institutional investors, export credit agencies, bilateral or multilateral organizations, bondholders and, sometimes, the host country government (PPP in Infraestructure Resource Center, 2015). Different from equity contributions, debt contributions have the highest priority in what concerns payback (e.g. senior debt must be paid before any other disbursements are made). The reimbursement of debt is usually associated with a fixed or floating interest rate and a scheme of periodic payments.

The source of debt will have an important influence on the nature of the debt provided. This is the type of finance instrument that this dissertation supports to finance the PPPs contracts. More specifically, this dissertation will support the idea that Public-Private Partnerships will benefit the most if financed by bonds issued by the consortium. There is also some literature that supports this kind of finance instrument towards PPPs, which strengthens this dissertation's conclusions (European PPP Expertise Centre, 2012). In the current financial market circumstances, bond financing can assume a key role in connecting the funding gap for infrastructure investments. Project bonds are debt mechanisms issued by consortiums, usually subscribed by institutional investors (e.g. pension funds, insurance companies). Sometimes, these are tradable on secondary

markets. This idea constitutes this dissertation's main argument and object of defence, supporting the usage of project bonds to finance PPPs as a more frequent reality. This instrument is usually positioned on the market either by public offering, which was discussed in the literature review of this dissertation, or by private placements. Public placements are best suitable for substantial transactions, while private ones are best suitable for smaller trades, as these involve lower costs and less complexity (European PPP Expertise Centre, 2012).

While bond funding plays a major role in some PPP markets outside Europe, for example Canada, real project bonds have just started being used in Europe, specifically to obtain deals for the project's procurement phase. The public sector has a significant role to play in helping the usage of project bonds in PPPs (European PPP Expertise Centre, 2012).

By nature, bonds are long-standing funding answers. Institutional investors investing in bonds pursue long-term assets to meet their long-term expectations and needs. For PPPs, this can be translated into financing solutions that nearly-match PPPs' agreements maturities and comprise no refinancing risk (as in projects funded by short-term commercial bank debt).

Bond financing grants the borrower debt directly from individuals, organizations or investors, rather than from intermediaries, like commercial lenders (PPP in Infraestructure Resource Center, 2015). The issuer (the borrower) trades the bonds to the lenders. The funding operation's main partner helps the issuer trading the bonds, ensuring its performance and help preventing the risk of default of the parties involved.

Another topic to consider is the fact that, in the current market circumstances, bond funding represents a better option than bank funding (European PPP Expertise Centre, 2012). This advantage can contribute to improving the value of money of a PPP project and its affordability for the investors. Rating organizations will evaluate the risk of the project, defining its attractiveness and the price at which investors should be reimbursed. If the credit's rating is solid, bond funding will offer the lowest borrowing expenses. In order to obtain stronger credit rating, rating agencies may be asked to be involved in the early stages of the project (PPP in Infraestructure Resource Center, 2015). Bond financers usually invest in solid valuable resources, being adverse to riskier instruments. To encourage the partnerships' performance, a proposed solution is to fixate the interest rate to a floating rate indexed to the performance of the indicators of the PPP.

Bond sponsoring offers a quantity of benefits to projects containing lower interest rates, longer maturity (which can be very supportive given the length of most of these plans) and more liquidity. Both partners (public and private) will have a way to finance the partnership and will decrease the initial investment. The quotation in the public trade markets will require an effort to accomplish the transparency, credibility and performance of the partnership, since this will impact in the price of the bond.

Still, there are disadvantages in using this instrument. The difficulties associated with funding through bond issues include the negative aspect of the long duration associated to this type of finance instrument. If the bond is paid at maturity, investors will wait for a long time to recover the greatest part of their investment. Another disadvantage of this finance tool is the high uncertainty in the underwriting process, due to the volatility in the securities market (PPP in Infraestructure Resource Center, 2015). Low flexibility throughout the project's operation (e.g. to approving disclaimers and adjustments), given the variety of bondholders and the difficulty of getting approval for changes, is also an issue of this process. Bond funding involve significant initial spending, such as the obtaining a solid credit rating for the bonds, preparing the bond's credentials and marketing operations. Legal costs can be also high in public offerings (European PPP Expertise Centre, 2012).

In the case of early payback by the consortium, the bond owners will have to be compensated for the remaining period of time of the project, as if the bond had reached its maturity (European PPP Expertise Centre, 2012). The compensation fee is usually calculated by assuming a reinvestment of the prematurely repaid investment for the outstanding period and it is subject to changes on the par value of the bonds. Early ending reimbursement considerations of a PPP contract must be then be reflect in the project agreed terms (European PPP Expertise Centre, 2012).

Some literature supports (PPP in Infraestructure Resource Center, 2015) that bond financing has limited usage on a projects' initial stages due to risk and uncertainty, but it also represents a considerable choice for refinancing, once construction threats become less relevant.

8. Conclusions

After studying this subject, it is possible to draw some conclusions about Public-Private Partnerships and the possibility of this type of associations between the Public and Private sectors being quoted on the financial markets.

In a first instance, it is important to mention the current public general mistrust of PPP contracts. It is almost impossible in a country like Portugal to start in a near future a new program of PPPs, because of their current reputation and greatly negative opinion of the Portuguese population about these programs. PPPs in Portugal were a financial disaster for the Portuguese public sector, resulting on huge financial losses and several political issues for the governments that started and consented the previously analysed partnerships.

The potential advantages of PPPs are known and this dissertation covered this topic. The main and ground idea of this study is the possibility of creating a mechanism that can bring higher credibility and honesty to PPPs, and at the same time a finance tool for the public and private sector. Taking this into consideration, the opportunity of these agreements being quoted on financial markets seemed logical.

It was fundamental to assess the Portuguese reality, through a complete study of the Portuguese partnerships and the current situation of the Portuguese private partners, analysing if these are publicly traded companies or not. Following this subject, a comparison was made with several European countries and their PPPs. The conclusion was that countries with a more economically and politically stable situation have a higher percentage of the total investment in PPPs with a publicly traded private partner than countries like Portugal, Greece or Ireland. Another relevant conclusion relates to higher investment demanding projects are more likely to be related with publicly listed private partners.

After this analysis, the next stage of this dissertation was observing the minimum requirements for going public in the Portuguese stock exchange. It was also verified if the Portuguese companies involved in PPPs with the public sector were prepared for being quoted and if they fulfilled the requirements stated by the Portuguese regulation in the Chapter 5 of this study. It was concluded that there are very few Portuguese companies that meet the minimum requirements and that the only companies that actually fulfil all these are public nowadays, with the exception of Brisa. Analysing these requirements, it is observed that the only criterion that is met by all Portuguese companies relates to the

minimum activity period (3 years). However, the most important remark and highlight goes to the lack of information on several companies that was impossible to obtain, evidencing absence of transparency and lack of fundamental data to perform a rigorous analysis of these PPPs contracts.

Also, it was essential to evaluate, discuss and verify the potential advantages and disadvantages of establishing PPPs as publicly traded contracts and concluding if this situation is actually favourable or not. The main advantage of being quoted is the increase of the project's credibility and the accuracy of this mechanism.

The last step involved choosing the proposed finance instrument to quotation at the financial markets. After the discussion in the last chapter, it was concluded that the best way to finance PPPs through a mechanism that meets the fundamental requirements approached in this dissertation is a debt instrument, namely project bonds, which will provide an alternative way to finance PPPs, decreasing the investment of the public and private sectors.

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Table 1 – Summary Table of PPPs in Management Phase in Portugal

	Quoted		Not Quoted		Total	
Type of the Partnership	**(Nr)**	**(€) ***	**(Nr)**	**(€) ***	**(Nr)**	**(€) ***
Environment / Energy	6	4.519	37	7.606	43	12.125
Healthcare	-	-	7	215	7	215
Infraestructures	-	-	1	112	1	112
Transportation (1) - Road	2	3.175	12	6.369	14	9.543
Transportation (2) - Railway	-	-	2	1.169	2	1.169
Total	**8**	**7.693**	**59**	**15.470**	**67**	**23.163**
Percentage	**12%**	**33%**	**88%**	**67%**	**100%**	**100%**

* Indicative value in million of Euros

Table 2 - Summary Table of PPPs in Construction Phase in Portugal

	Quoted		Not Quoted		Total	
Type of the Partnership	**(Nr)**	**(€) ***	**(Nr)**	**(€) ***	**(Nr)**	**(€) ***
Environment / Energy	5	3.167	-	-	5	3.167
Healthcare	-	-	*3*	190	3	190
Infraestructures	-	-	-	-	-	-
Transportation (1) - Road	-	-	*8*	3.745	8	3.745
Transportation (2) - Railway	-	-	*1*	1.339	1	1.339
Total	**5**	**3.167**	**12**	**5.274**	**17**	**8.441**
Percentage	**29%**	**38%**	**71%**	**62%**	**100%**	**100%**

* Indicative value in million of Euros

Table 3 – Summary table of the analysis of Portuguese law requirements for market quotation

PPP Phase	**Three years of activity**	**Disclosure reports for the least three years**	**Disclosure semiannual reports for the least three years**	**Appropriate degree of dispersion by public (25 % of the share capital)**	**Expected Market Capitalization of at least 1 million euros**	**Financial Statements audited by a registered auditor in CMVM**	**Financial information unavailable**
Management	32	14	1	1	23	23	9
Management / Construction	2	1	1	1	2	2	-
Construction	14	2	2	2	2	2	12
Total of companies that fullfill each requirement for quotation	**48**	**17**	**4**	**4**	**27**	**27**	**21**
Total of companies that signed PPP's contracts	**48**	**48**	**48**	**48**	**48**	**48**	**48**
Percentage	**100%**	**35%**	**8%**	**8%**	**56%**	**56%**	**44%**

Table 4 – Shortened table of the PPPs contracts in Europe, based on the Partnerships Bulletin website

Quoted?		Type of the Partnership													
		Environment / Energy		Healthcare		Infraestructures		Transportation (1) - Road		Transportation (2) - Railways		Total		Total (%)	
	Countries	*(Nr)*	*(€) **	*(Nr)*	*(€) **	*(Nr)*	*(€) **	*(Nr)*	*(€) **	*(Nr)*	*(€) **	*(Nr)*	*(€) **	*(Nr)*	*(€) **
	Belgium & Croatia	-	-	-	-	**5**	**272**	**2**	**450**	**1**	**170**	**8**	**892**	**100%**	**100%**
	No	-	-	-	-	2	109	1	360	-	-	**3**	**469**	**38%**	**53%**
	Yes	-	-	-	-	3	163	1	90	1	170	**5**	**423**	**63%**	**47%**
	Denmark & Finland	-	-	-	-	**1**	**16**	**2**	**985**	-	-	**3**	**1.001**	**100%**	**100%**
	No	-	-	-	-	-	-	-	-	-	-	-	-	**0%**	**0%**
	Yes	-	-	-	-	1	16	2	985	-	-	**3**	**1.001**	**100%**	**100%**
	France	-	-	**3**	**710**	**15**	**3.695**	**7**	**2.648**	**3**	**5.750**	**28**	**12.804**	**100%**	**100%**
	No	-	-	-	-	3	237	3	824	1	550	**7**	**1.612**	**25%**	**13%**
	Yes	-	-	3	710	12	3.458	4	1.824	2	5.200	**21**	**11.192**	**75%**	**87%**
	Germany	-	-	**2**	**188**	**12**	**1.136**	**3**	**632**	-	-	**17**	**1.956**	**100%**	**100%**
	No	-	-	2	188	5	218	1	2	-	-	**8**	**408**	**47%**	**21%**
	Yes	-	-	-	-	7	918	2	630	-	-	**9**	**1.548**	**53%**	**79%**
	Greece & Ireland	-	-	-	-	**1**	**117**	**8**	**6.135**	-	-	**9**	**6.252**	**100%**	**100%**
	No	-	-	-	-	-	-	5	3.965	-	-	**5**	**3.965**	**56%**	**63%**
	Yes	-	-	-	-	1	117	3	2.170	-	-	**4**	**2.287**	**44%**	**37%**
	Italy & Netherlands	**1**	**75**	**5**	**440**	-	-	**3**	**372**	**1**	**380**	**10**	**1.267**	**100%**	**100%**
	No	1	75	4	376	-	-	2	364	1	380	**8**	**1.195**	**80%**	**94%**
	Yes	-	-	1	64	-	-	1	8	-	-	**2**	**72**	**20%**	**6%**
	Poland, Russia & Slovakia	-	-	**1**	**35**	**2**	**308**	**5**	**6.060**	-	-	**8**	**6.403**	**100%**	**100%**
	No	-	-	-	-	-	-	2	1.520	-	-	**2**	**1.520**	**25%**	**24%**
	Yes	-	-	1	35	2	308	3	4.540	-	-	**6**	**4.883**	**75%**	**76%**
	Spain	-	-	**7**	**755**	**5**	**1.114**	**8**	**1.384**	**1**	**50**	**21**	**3.303**	**100%**	**100%**
	No	-	-	4	413	2	54	4	490	-	-	**10**	**956**	**48%**	**29%**
	Yes	-	-	3	342	3	1.060	4	895	1	50	**11**	**2.347**	**52%**	**71%**
	Turkey	-	-	**1**	**278**	-	-	**1**	**846**	-	-	**2**	**1.124**	**100%**	**100%**
	No	-	-	1	278	-	-	1	846	-	-	**2**	**1.124**	**100%**	**100%**
	Yes	-	-	-	-	-	-	-	-	-	-	-	-	**0%**	**0%**
	UK	-	-	**2**	**19**	**46**	**18.617**	-	-	-	-	**48**	**18.636**	**100%**	**100%**
	No	-	-	2	19	35	7.501	-	-	-	-	**37**	**7.520**	**77%**	**40%**
	Yes	-	-	-	-	11	11.116	-	-	-	-	**11**	**11.116**	**23%**	**60%**
	Total - No	1	**75**	13	**1.274**	47	**8.119**	19	**8.371**	2	**930**	82	**18.769**		
	Total - No (%)	100%	**100%**	62%	**53%**	54%	**32%**	49%	**43%**	33%	**15%**	53%	**35%**		
	Total - Yes	-	-	8	**1.151**	40	**17.155**	20	**11.141**	4	**5.420**	72	**34.867**		
	Total - Yes (%)	0%	**0%**	38%	**47%**	46%	**68%**	51%	**57%**	67%	**85%**	47%	**65%**		
	Total	1	**75**	21	**2.425**	87	**25.274**	39	**19.512**	6	**6.350**	154	**53.637**		
	Total %	100%	**100%**	100%	**100%**	100%	**100%**	100%	**100%**	100%	**100%**	100%	**100%**		

* Indicative value in million of Euros

Annex 1 – List of Portuguese Public – Private Partnerships in a management phase (until 2012)

Type	Concession Description	Private Partner	Starting Date	Term of the Partnership	Investment *	Quoted?
Transportation (1) - Road	Concessão Lusoponte	Lusoponte - Conc. para a Travessia do Tejo em Lisboa, S.A.	1995	30 Years	867	No
Transportation (1) - Road	Concessão Norte	Ascendi Norte - Auto Estradas do Norte, S.A.	1999	36 Years	879,2	No
Transportation (1) - Road	Concessão Oeste	Auto-Estradas do Atlântico, S.A.	1999	30 Years	453,5	No
Transportation (1) - Road	Concessão Brisa	Brisa - Auto-Estradas de Portugal, S.A.	2000	35 Years	2.623,8	Yes ***
Transportation (1) - Road	Concessão Litoral Centro	Brisal - Auto-Estradas do Litoral, S.A.	2004	30 Years	550,7	Yes ***
Transportation (1) - Road	Concessão da Beira Interior (IP2/IP6)	Scutvias - Auto Estrada da Beira Interior, S.A.	1999	30 Years	628,3	No
Transportation (1) - Road	Concessão Costa de Prata	Ascendi Costa de Prata – Auto Estradas da Costa de Prata S.A.	2000	30 Years	320,7	No
Transportation (1) - Road	Concessão do Algarve (IC4/IP1)	Euroscut – Sociedade Concessionária da SCUT do Algarve S.A.	2000	30 Years	228,5	No
Transportation (1) - Road	Concessão Interior Norte (IP3)	NorScut - Concessionária de Auto-Estradas SA	2000	30 Years	504,1	No
Transportation (1) - Road	Concessão das Beiras Litoral e Alta (IP5)	Ascendi Beiras Litoral e Alta - Auto-estradas das Beiras Litoral e Alta, SA	2001	30 Years	718,4	No
Transportation (1) - Road	Concessão Norte Litoral	EuroScut Norte - Sociedade Concessionária da SCUT do Norte Litoral, SA	2001	30 Years	318,6	No
Transportation (1) - Road	Concessão Grande Porto	Ascendi Grande Porto - Auto-estradas do Grande Porto, SA	2002	30 Years	492,5	No
Transportation (1) - Road	Concessão Grande Lisboa	Ascendi Grande Lisboa – Auto Estradas da Grande Lisboa, SA	2007	30 Years	180	No
Transportation (1) - Road	Concessão Douro Litoral	AEDL - Auto-estradas do Douro Litoral, SA	2007	27 Years	777,7	No
Transportation (2) - Railway	Metro Sul Tejo	MTS - Metro Transportes do Sul, SA	2002	30 Years	268,7	No
Transportation (2) - Railway	Transp. Ferroviário eixo-norte/sul	Fertagus, SA	1999	20 Years	900	No
Healthcare	Gestão do Centro de Atendimento do SNS	LCS - Linha de Cuidados de Saúde, SA	2006	6 Years	4	No
Healthcare	Gestão Centro Medicina Física Reabilitação Sul	GP Saúde, SA	2006	7 Years	3	No
Healthcare	Gestão do H. Braga - Ent. Gestora Estabelecimento	Escala Braga, Gestora do Estabelecimento SA	2009	10 Years	11,3	No
Healthcare	Gestão do H. Braga - Ent. Gestora do Edifício	Escala Braga, SA	2009	30 Years	122	No
Healthcare	Gestão H. Cascais-Ent. Gestora Estabelecimento	HPP - Hospitais Privados de Portugal, SGPS, SA	2008	10 Years	16	No
Healthcare	Gestão H. Cascais - Ent. Gestora do Edifício	TDHOSP - Gestão de Edifício Hospitalar SA	2008	30 Years	56	No
Healthcare	Gestão H. Vila Franca-Ent. Gestora Estabelecimento	Escala Vila Franca - Gestora do Estabelecimento, SA	2010	10 Years	2,5	No
Environment / Energy	Água do Centro Alentejano	Águas do Centro Alentejano, SA	2003	30 Years	75,8	No
Environment / Energy	Águas do Douro e Paiva	Águas do Douro e Paiva, SA	1996	30 Years	452,7	No
Environment / Energy	Água do Oeste	Águas do Oeste, SA	2001	30 Years	294,8	No
Environment / Energy	Água do Município de Santo André	Águas de Santo André, SA	2001	30 Years	130,3	No
Environment / Energy	Água da Região de Trás-os-Montes e Alto Douro	Águas de Trás-os-Montes e Alto Douro, SA	2001	30 Years	418,4	No
Environment / Energy	Água da Região do Algarve	Águas do Algarve, SA	2001	36 Years	457,3	No
Environment / Energy	Águas do Centro	Águas do Centro, SA	2001	30 Years	177	No
Environment / Energy	Água do Mondego	Águas do Mondego, SA	2004	35 Years	232	No
Environment / Energy	Água do Norte Alentejano	Águas do Norte Alentejano, SA	2001	30 Years	94	No
Environment / Energy	Água do Zêzere e Côa	Águas do Zêzere e Côa, SA	2000	30 Years	286	No
Environment / Energy	Águas do Noreste	Águas do Noreste, SA	2010	50 Years	800	No

Type	Concession Description	Private Partner	Starting Date	Term of the Partnership	Investment *	Quoted?
Environment / Energy	Águas Públicas do Alentejo	Águas Públicas do Alentejo, SA	2010	50 Years	224,5	No
Environment / Energy	Águas da Região de Aveiro	Águas da Região de Aveiro, SA	2010	50 Years	103	No
Environment / Energy	Resíduos Sólidos do Algarve	Algar, SA	1996	25 Years	60,7	No
Environment / Energy	Resíduos Sólidos da Margem Sul do Tejo	Amarsul, SA	1997	25 Years	70,1	No
Environment / Energy	Resíduos Sólidos do Litoral Centro	Ersuc, SA	1997	25 Years	87,7	No
Environment / Energy	Resinorte	Resinorte - Valorização e Tratamento Resíduos Sólidos, SA	2009	30 Years	190,8	No
Environment / Energy	Resistrela	Resiestrela - Valorização e Tratamento Resíduos Sólidos, SA	2008	30 Years	34,1	No
Environment / Energy	Resíduos Sólidos do Vale do Lima e Baixo-Cávado	Resulima, SA	1996	25 Years	31,6	No
Environment / Energy	Resíduos Sólidos do Sul Douro	Suldouro, SA	1996	25 Years	52,9	No
Environment / Energy	Resíduos Sólidos do Norte Alentejano	Valnor, SA	2001	29 Years	24,8	No
Environment / Energy	Resíduos Sólidos da Alta Estremadura	Valorlis, SA	1996	25 Years	31	No
Environment / Energy	Resíduos Sólidos do Vale do Minho	Valorminho, SA	1996	25 Years	14,1	No
Environment / Energy	Resíduos Sólidos de Lisboa e do Oeste	Valorsul, SA	2010	25 Years	328,5	No
Environment / Energy	Saneamento Costa do Estoril	Sanest, SA	1995	25 Years	201,6	No
Environment / Energy	Saneamento Município de Setúbal	Simarsul, SA	2004	30 Years	235,9	No
Environment / Energy	Saneamento Bacia do Rio Lis	Simlis, SA	2000	30 Years	75	No
Environment / Energy	Saneamento Ria de Aveiro	Simria, SA	2000	30 Years	313,7	No
Environment / Energy	Saneamento na Foz do Tejo e Trancão	Simtejo, SA	2001	30 Years	536,3	No
Environment / Energy	Simdouro	Simdouro - Saneamento do Grande Porto, S. A	2009	50 Years	72	No
Environment / Energy	Armaz. Subterrâneo de Gás Natural (Guarda)	Transgás Armazenagem, SA	2006	40 Years	29	No
Environment / Energy	Distribuição Regional de Gás Natural (Lisboa)	Lisboagás Soc. Prod. Distrib. Gás, SA	2008	40 Years	578	No
Environment / Energy	Distribuição Regional de Gás Natural (Centro)	Lusitaniagás-Comp. Gás do Centro, SA	2008	40 Years	289,3	No
Environment / Energy	Distribuição Regional de Gás Natural (Setúbal)	Setgás - Soc. Prod. Distrib. Gás, SA	2008	40 Years	159,8	No
Environment / Energy	Distribuição Regional de Gás Natural (Porto)	Portgás - Soc. Prod. Distrib. Gás, SA	2008	40 Years	307,4	No
Environment / Energy	Armaz. Regasificação de Gás Natural (Sines)	REN Atlântico, SA	2001	40 Years	212	Yes**
Environment / Energy	Armaz. Subterrâneo Gás Natural (Guarda, Pombal)	REN Armazenagem, SA	2000	40 Years	114,9	Yes**
Environment / Energy	Distribuição Regional de Gás Natural (Beiras)	Beiragás-Companhia das Beiras, SA	2010	40 Years	69,2	No
Environment / Energy	Distribuição Regional de Gás Natural (Vale do Tejo)	Tagusgás - Empresa Gás Vale do Tejo, SA	2010	40 Years	66,5	No
Environment / Energy	Gestão Rede Nacional Transporte de Gás Natural	REN Gasodutos, SA	2010	40 Years	753	Yes**
Environment / Energy	Rede Eléctrica Nacional	REN - Rede Eléctrica Nacionnal, SA	1996	50 Years	1.291,7	Yes
Environment / Energy	Exploração da Rede Nac. Distribuição de Electricidade	EDP - Distribuição Energia, SA	1997	35 Years	1.808,3	Yes**
Environment / Energy	Barragem do Alqueva	EDP	1997	35 Years	339	Yes
Infraestructures	SIRESP	SIRESP - Redes Digitais de Seg. e Emergência	2006	15 Years	112	No

* Indicative value in million of Euros

** Subsidiaries that are controlled by a quoted company

*** Brisa was a quoted company until 2013. In the moment of the signature it was a public traded company.

Source: Direcção Geral do Tesouro e Finanças, 2012

Annex 2 – List of Portuguese Public – Private Partnerships in a construction phase (until 2012)

Type	Concession Description	Private Partner	Starting Date	Term of the Partnership	Investment *	Quoted?
Transportation (1) - Road	Subconcessão Transmontana	Auto-Estradas XXI - Subconcessionária Transmontana, SA	2008	30 Years	535,9	No
Transportation (1) - Road	Subconcessão Douro Interior	AENOR Douro - Estradas do Douro, SA	2008	30 Years	641,7	No
Transportation (1) - Road	Concessão Tunel do Marão	Auto-Estradas do Marão	2008	30 Years	348,2	No
Transportation (1) - Road	Subconcessão Baixo Alentejo	SPER - Sociedade Portuguesa para a Construção e Exploração Rodoviária, SA	2009	30 Years	381,9	No
Transportation (1) - Road	Subconcessão Baixo Tejo	VBT - Vias do Baixo Tejo, SA	2009	30 Years	270,1	No
Transportation (1) - Road	Subconcessão Litoral Oeste	AELO - Auto-estradas do Litoral Oeste, SA	2009	30 Years	443,6	No
Transportation (1) - Road	Subconcessão Algarve Litoral	Rotas do Algarve Litoral, SA	2009	30 Years	165,1	No
Transportation (1) - Road	Subconcessão Pinhal Interior	Ascendi Pinhal Interior - Auto-estradas do Pinhal Interior, SA	2010	30 Years	958,2	No
Transportation (2) - Railway	PPP1 - Poceirão - Caia	Elos - Ligações de Alta Velocidade	2010	40 Years	1.339	No
Healthcare	Gestão do H. Loures - Ent. Gestora do Estabelecimento	SGHL - Soc. Gestora do Hospital de Loures, SA	2009	10 Years	29,3	No
Healthcare	Gestão do H. Loures - Ent. Gestora do Edifício	HL - Sociedade Gestora do Edifício, SA	2009	30 Years	84,6	No
Healthcare	Gestão do H. Vila Franca - Ent. Gestora do Edifício	Escala Vila Franca - Gestora do Edifício, SA	2010	30 Years	76	No
Environment / Energy	Barragem de Foz Tua	EDP	2008	75 Years	340	Yes
Environment / Energy	Barragens de Gouvães, Padreselos, Alto Tâmega, Daivões	IBERDROLA Portugal	2008	65 Years	1.700	Yes**
Environment / Energy	Barragens do Fridão e Alvito	EDP	2008	65 Years	510	Yes
Environment / Energy	Barragem Baixo Sabor	EDP	2008	65 Years	257	Yes
Environment / Energy	Barragem Girabolhos	ENDESA	2008	65 Years	360	Yes**

* Indicative value in million of Euros

** Subsidiaries that are controlled by a quoted company

Source: Direcção Geral do Tesouro e Finanças, 2012

Annex 3 – List of European Public – Private Partnerships signed and developed (until 2012) based on the Partnerships Bulletin website

Type	Country	Concession Description	Private Partner	Starting Date	Term of the Partnership	Investment *	Quoted?
Healthcare	Poland	Poland: Zywiec Hospital PPP	EMC Instytut Medyczny consortium	19-09-2011	30 Years	35	Yes
Infrastructures	Poland	Poland: Wroclaw Parking Project PPP	Mota-Engil	16-07-2010	40 Years	7,8	Yes
Transportation (1) - Road	Poland	Poland, Roads Authority - A1 motorway Gdansk to Torun	Gdansk Transport Company (GTC)	29-07-2004	35 Years	680	No
Transportation (1) - Road	Poland	Poland, Roads Authority - A2 motorway, Nowy Tomysl - Konin	Autostrada Wielkopolska SA	05-03-2000	36 Years	840	No
Infrastructures	Russia	Russia: St Peterburg Waste PPP	Aktor Consortium (Detained by Ellaktor)	19-05-2011	30 Years	300	Yes
Transportation (1) - Road	Russia	Russia: Western High Speed Diameter (WHSD) Toll Road	Astaldi, Gazprombank and Ictaas Insaa	05-01-2012	30 Years	2.500	Yes
Transportation (1) - Road	Russia	Russia: Moscow-St.Peters. PPP PhaseE 1	Vinci consortium	27-04-2010	30 Years	1.500	Yes
Transportation (1) - Road	Slovakia	Slovakia: R1 Highway PPP	Granvia Consortium (Detained by Vinci and Meridian)	30-08-2009	30 Years	540	Yes
Transportation (1) - Road	Croatia	Croatian Ministry of Transport - Zagreb to Macelj Motorway	Autovesta Zagreb-Macelj d.o.o.	24-07-2004	28 Years	360	No
Transportation (1) - Road	Greece	GREECE: CORINTH-TRIPOLI-KALAMATA	Moreas consortium (Aktor consortium - Detained by Ellaktor)	05-03-2008	30 Years	1.000	Yes
Transportation (1) - Road	Greece	Greece, Ministry of Transport and Communications - CSB toll road	Olympia Odos (Apion Kleos)	24-07-2007	30 Years	2.100	No
Transportation (1) - Road	Greece	Greece, Ministry of Transport and Communications - Maliakos-Kleidi motorway	Aegean Motorway (Detained by Vinci and Ellator)	24-07-2007	30 Years	720	Yes
Transportation (1) - Road	Greece	Greece, Ministry of Transport and Communications - Central Greece toll road	Cintra/ACS/GEK	05-06-2007	30 Years	65	No
Transportation (1) - Road	Greece	Greece, Ministry of Transport and Communications - Ionian roads	Hellenic Autopistas Consortium	19-12-2006	30 Years	1.150	No
Transportation (1) - Road	Greece	Greece, Ministry of Transport and Communications - Thessaloniki tunnel	Thermaiki Odos (Detained by Ellaktor)	31-10-2006	30 Years	450	Yes
Environment / Energy	Italy	ITALY: SALERNO PHOTOVOLTAIC PARK	Monteboli	04-08-2011	7 Years	75	No
Healthcare	Italy	Italy, Ministry of Health - Legnano hospital	Genesi Uno	30-03-2007	24 Years	55	No
Healthcare	Italy	Italy, Ministry of Health - Maria Adelaide/ Torino Sanita hospital	Torino Sanita SpA	02-02-2006	27 Years	32	No
Healthcare	Italy	Italy, Unita Sanitario Locale 12 Venezia - Mestre hospital, Venice	Veneta Sanitaria Finanza di Projetto (VFSP)	19-04-2005	29 Years	258	No
Healthcare	Italy	Italy, Ministry of Health - Ospedale del Mare, Naples	Astaldi	29-07-2004	25 Years	64	Yes
Healthcare	Italy	Italy, Unita Sanitaria Locale n.8 Asolo - Castelfranco and MonteBelluna hospital	Guerrato Consortium	01-04-2004	28 Years	31	No
Transportation (1) - Road	Italy	Italy, Region of Tuscany - Signa-Prato motorway	Societa Infrastrutture Toscane Spa	17-07-2006	40 Years	214	No
Transportation (2) - Railway	Italy	ITALY: MILAN METRO LINE M5 PHASE TWO	Metro 5 S.p.A	04-02-2011	25 Years	190	No
Transportation (2) - Railway	Italy	ITALY: MILAN METRO LINE M5 PHASE ONE	Metro 5 S.p.A	14-06-2006	32 Years	190	No

* Indicative value in million of Euros

Source: Public- Private Partnerships Bulletin, www.partnershipsbulletin.com

Type	Country	Concession Description	Private Partner	Starting Date	Term of the Partnership	Investment *	Quoted?
Healthcare	Spain	SPAIN: CAN MISSES HOSPITAL PPP (IBIZA)	Gran Hospital Can Misses consortium	21-12-2010	32 Years	100	No
Healthcare	Spain	Spain, Balearics Health Authority - Son Dureta university hospital	Concesionaria Hospital de Son Dureta	25-01-2007	30 Years	233	No
Healthcare	Spain	Spain, Generalitat Valenciana - Horta Manises hospital	Sanitas/Ribera consortium	10-12-2006	15 Years	137	Yes
Healthcare	Spain	Spain, Madrid Consejeria de Sanidad - hospital del Tajo	Constructora Hispanica/Sando	29-08-2005	30 Years	20	No
Healthcare	Spain	Spain, Madrid Consejeria de Sanidad - hospital de Vallecas	Begar/Ploder	16-08-2005	30 Years	60	No
Healthcare	Spain	Spain, Madrid Consejeria de Sanidad - hospital de Herares, Coslada	Sacyr/Testa/Valoriza	14-06-2005	30 Years	55	Yes
Healthcare	Spain	Spain, Madrid Consejeria de Sanidad - hospital Puerta de Hierro, Majadahonda	Bovis Lend Lease/Dragados/Grupo Sufi	01-04-2005	30 Years	150	Yes
Infrastructures	Spain	Spain, Generalitat de Catalunya - Barcelona judicial offices and courts complex	Ferrovial/FCC	01-09-2003	35 Years	200	Yes
Infrastructures	Spain	Spain, Catalan Port Authority - inner harbour in Barcelona	Marina Far Vilanova	14-03-2007	11 Years	34,5	No
Infrastructures	Spain	Spain, City Council of Vigo - Auditorio-Palacio de Congresos Casa Mar	Sacyr-Vallehermoso	10-07-2006	35 Years	60	Yes
Infrastructures	Spain	Spain, Communidad Autonoma de Aragon - wastewater facilities, Teruel	Aqualia/ATECMA	17-02-2006	20 Years	19,3	No
Infrastructures	Spain	Spain, Ministry of the Environment - Segarra Garrigues irrigation project, Catalonia	FCC	10-12-2002	30 Years	800	Yes
Transportation (1) - Road	Spain	Spain, Ministry of Transport - autovia de Ademuz (CV35), Lliria to Losa del Obispo	Sacyr/Secosa	02-02-3005	35 Years	200	Yes
Transportation (1) - Road	Spain	SPAIN: A-308 IZNALLOZ–DARRO ROAD	Autovía de la Sierra de Arana consortium	11-07-2011	30 Years	200	No
Transportation (1) - Road	Spain	Spain, Autonomous Region of Castilla y Leon - Valladolid-Segovia toll road, second section	Dragados/Cyopsa Sisocia/Duero	26-04-2006	35 Years	91,6	Yes
Transportation (1) - Road	Spain	Spain, Autonomous Region of Castilla y Leon - Valladolid-Segovia toll road, first section	Sacyr/Itinere/Ausines/Lerma	26-04-2006	35 Years	103	Yes
Transportation (1) - Road	Spain	Spain, Generalitat de Catalunya - Catalonia toll road, Costa Brava	Cedinsa	07-10-2005	33 Years	63	No
Transportation (1) - Road	Spain	Spain, Consorcio Regional de Transportes de Madrid - Parla light rail	Tranvia de Parla S.A.	22-08-2005	40 Years	103,5	No
Transportation (1) - Road	Spain	Spain, Madrid Consejeria Transportes e Infraestructuras - calle 30, phase 1 (southern ring)	Ferrovial/Dragados/API	15-06-2005	30 Years	500	Yes
Transportation (1) - Road	Spain	Spain: A-334 ROAD, Purchena - A7 Section	Acciona-led consortium	19-03-2012	30 Years	123	No
Transportation (2) - Railway	Spain	Spain, Madrid Consejeria Transportes - extension of metro of Barajas airport	FCC/Caja Madrid	20-04-2006	20 Years	50	Yes
Healthcare	Turkey	TURKEY: KAYSERI HEALTH CAMPUS PPP	YDA Group/ Inso	16-08-2011	28 Years	278	No
Transportation (1) - Road	Turkey	TURKEY: EURASIA TUNNEL	ATAS (Avrasya Tüneli İşletme İnşaat ve Yatırım A.Ş.)	11-12-2012	26 Years	846	No
Infrastructures	Belgium	Belguim: Flanders Sports Halls	Democo-Denys consortium	01-06-2012	30 Years	30	Yes
Infrastructures	Belgium	Belgium: Sports Complex PPP	Cordeel-Hoeselt-Temse Consortium	24-11-2011	30 Years	9	No
Infrastructures	Belgium	Belgium: Mons Prison, Leuze-en-Hainaut	Future Prisons consortium	01-08-2011	25 Years	100	No
Infrastructures	Belgium	Belgium: Marche-en-Famenne Prison PPP	Eiffage Benelux /Eiffage/DG Infra+	30-06-2011	25 Years	73	Yes
Infrastructures	Belgium	Belgium: Dendermonde Prison PPP	BAM PPP	29-06-2011	25 Years	60	Yes
Transportation (1) - Road	Belgium	Belgium: R4-South To Gent Road	Eiffage/ Besix/ Heijmans/ Stadsbader (DBM contract)	08-02-2012	30 Years	90	Yes
Transportation (2) - Railway	Belgium	Belgium: Pegasus Livan 1 TRAM	BAM PPP	21-12-2012	35 Years	170	Yes
Infrastructures	Denmark	Denmark, Ministry of Education - Vildbjerg Skole school project	MT Hojaard/ Dan Ejendomme	05-05-2005	30 Years	16	Yes
Transportation (1) - Road	Finland	Finland: E18 Koskenkyla - Kotka Highway	Vinci Concessions	09-12-2011	20 Years	285	Yes
Transportation (1) - Road	Finland	Finland, Finnish Road Administration - E18 motorway	Skanska Infrastructure Development	27-10-2005	25 Years	700	Yes

* Indicative value in million of Euros

Source: Public- Private Partnerships Bulletin, www.partnershipsbulletin.com

Type	Country	Concession Description	Private Partner	Starting Date	Term of the Partnership	Investment *	Quoted?
Healthcare	France	FRANCE: NEW HOSPITAL CENTRE PIERRE OUDOT	GFC Construction	10-05-2007	32 Years	230	Yes
Healthcare	France	France, Ministry for Health and Solidarity - Sud-Francilien hospital centre	Eiffage led consortium	11-07-2006	30 Years	340	Yes
Healthcare	France	France, Ministry for Health and Solidarity - Hopitaux de Caen	Boygues SA	02-02-2006	25 Years	140	Yes
Infrastructures	France	France, City of Lille - stadium	Eiffage	16-10-2008	31 Years	350	Yes
Infrastructures	France	France, City of Le Mans - Le Mans Stadium	VINCI Concessions	07-07-2008	35 Years	102	Yes
Infrastructures	France	France, AMOTMJ - prisons PPP third wave	Bouygues/Dexia/RBS	29-02-2008	25 Years	700	Yes
Infrastructures	France	France, AMOTMJ - prisons PPP, second wave	THEMIS	12-10-2006	30 Years	155	No
Infrastructures	France	France: Nice Stadium PPP	Vinci consortium	13-10-2010	30 Years	160	Yes
Infrastructures	France	France: Balard Minisry of Defence PPP	Boygues SA	02-06-2011	30 Years	600	Yes
Infrastructures	France	France: Bordeaux I University, PHASE I	Boygues SA	13-11-2012	27 Years	122	Yes
Infrastructures	France	France: Lagevin School	Fayat /Pitch Promotion consortium	11-06-2012	20 Years	12,4	No
Infrastructures	France	France: Seine-Saint-Denis Schools	Eiffage / Fayat	17-04-2012	20 Years	350	Yes
Infrastructures	France	France: Lorraine Schools PPP	Lylopolis consortium (Barclays Inf. Funds)	17-11-2011	22 Years	80	Yes
Infrastructures	France	France: Dunkerque Stadium	VINCI Concessions	10-07-2012	28 Years	112	Yes
Infrastructures	France	France: Bordeaux Stadium PPP	VINCI Concessions	31-10-2011	30 Years	165	Yes
Infrastructures	France	France: Marseille Stadium PPP	GFC Construction	08-11-2010	35 Years	267	Yes
Infrastructures	France	France: Nantes Airport PPP	VINCI Concessions	04-01-2011	55 years	450	Yes
Infrastructures	France	France, Conseil General de Meurthe-et-Moselle - telecommunications network	Societe MEMONET	29-07-2008	24 Years	70	No
Transportation (1) - Road	France	France, Ministry of Transport Geneve to Annecy stretch of A41 motorway	ADELAC	24-11-2005	55 Years	590	No
Transportation (1) - Road	France	France, Loiret Council - A19 motorway	Vinci	31-03-2005	65 Years	618	Yes
Transportation (1) - Road	France	France: Chasse-Sur-Rhone Street Lighting	SPIE Sud-Est	25-07-2012	15 Years	4,3	No
Transportation (1) - Road	France	FRANCE: A150 HIGHWAY	ALBEA consortium	23-11-2011	55 Years	230	No
Transportation (1) - Road	France	France: Plessis Robinson Raodworks	Boygues SA	22-11-2011	20 Years	52	Yes
Transportation (1) - Road	France	France: Vichy Southwest Bypass	Bouygues / Colas / DTP	01-11-2011	15 Years	54	Yes
Transportation (1) - Road	France	France: A63 Highway PPP	Boygues SA	01-09-2010	40 years	1.100	Yes
Transportation (2) - Railway	France	FRANCE: Ministry for Transport - Perpignan-Figueras HSL	TP Ferro consortium	10-02-2005	50 Years	550	No
Transportation (2) - Railway	France	France: Nimes - Montpellier High Speed Rail (CNM)	Vinci Consortium	28-06-2012	25 years	1.800	Yes
Transportation (2) - Railway	France	France: Brittany To Pays De La Loire High Speed Rail PPP	Eiffage consortium	19-01-2011	25 Years	3.400	Yes

* Indicative value in million of Euros

Source: Public- Private Partnerships Bulletin, www.partnershipsbulletin.com

Type	Country	Concession Description	Private Partner	Starting Date	Term of the Partnership	Investment *	Quoted?
Healthcare	Germany	Germany: Ansbach Nursing Home PPP	Hermann Kirchner	18-08-2011	30 Years	52	No
Healthcare	Germany	Germany, Federal Ministry of Health - proton therapy centre (WPE),	STRIBA Protonentherapiezentrum Essen GmbH	28-06-2006	15 Years	136	No
Infrastructures	Germany	Germany: Ministry Of Education and Research Building	Hochtief consortium	16-08-2011	30 Years	115	Yes
Infrastructures	Germany	Germany: Hamburg Schools	HEOS Berufsschulen Hamburg (Strabag)	04-09-2012	30 Years	300	Yes
Infrastructures	Germany	Germany: Braunschweig Schools PPP	Hochtief PPP Solutions	28-10-2011	25 Years	279	Yes
Infrastructures	Germany	Germany, City of Cologne - school	Hochtief PPP Solutions	09-10-2007	25 Years	125	Yes
Infrastructures	Germany	Germany, District of Parchim - Luebz high school	MBN Bauaktiengesellschaft	21-07-2007	20 Years	7,8	No
Infrastructures	Germany	Germany, District of Ebersberg - secondary school in Kirchseeon	SKE/Stingl (Vinci consortium)	02-05-2007	20 Years	38,8	Yes
Infrastructures	Germany	Germany, County of Duren - schools	Hermann Kirchner	18-04-2007	25 Years	22	No
Infrastructures	Germany	Germany, City of Leverkusen - vocational education centre	Hochtief PPP	10-05-2005	29 Years	26	Yes
Infrastructures	Germany	Germany, City of Cologne - schools (1)	Hochtief PPP	06-04-2005	25 Years	34	Yes
Infrastructures	Germany	Germany, Federal Ministry of Defense - Fuerst Wrede Kaserne barracks	Park Vossegat	13-03-2008	20 Years	48	No
Infrastructures	Germany	Germany, Municipality of Sylt-Ost - Keitum hot spring	Keitum Therme Sylt-Ost Betriebsgesellschaft	09-06-2006	20 Years	15	No
Infrastructures	Germany	Germany, City of Wiesbaden - justice and civic centre	Bilfinger Project Investments Ltd	30-03-2007	30 Years	125	No
Transportation (1) - Road	Germany	Germany: A9 Road PPP	The Via Gateway Thuringen consortium (BAM)	22-09-2011	20 Years	220	Yes
Transportation (1) - Road	Germany	Germany: A8 Highway Upgrade PPP	Hochtief /Strabag	07-06-2011	30 Years	410	Yes
Transportation (1) - Road	Germany	Germany, City of Harsewinkel - Klosterstrae-Bielefelder road	KIRCHNER PPP Service	10-01-2007	30 Years	2,4	No
Infrastructures	Ireland	Ireland: Schools PPP Bundle Three	BAM Infrastructure Cooperatie	12-11-2012	25 Years	117	Yes
Transportation (1) - Road	Ireland	Ireland: M7/M8 Portlaoise motorway PPP	Celtic Roads Group	14-06-2007	30 Years	350	No
Transportation (1) - Road	Ireland	Ireland, National Roads Authority - N25 Waterford bypass	Celtic Roads Group	21-04-2006	30 Years	300	No
Transportation (1) - Road	Netherlands	Netherlands: N33 Highway PPP	VolkerWessels	21-11-2012	20 Years	150	No
Transportation (1) - Road	Netherlands	Netherlands: Harmelen Perimeter Road	BAM	09-07-2012	15 Years	7,5	Yes

* Indicative value in million of Euros

Source: Public- Private Partnerships Bulletin, www.partnershipsbulletin.com

Type	Country	Concession Description	Private Partner	Starting Date	Term of the Partnership	Investment *	Quoted?
Healthcare	UK	Health Protection Agency - Computer System	Several partners	06-08-2001	7 years	£1,5	No
Healthcare	UK	NHS Strategic Tracing Service - IT	Several partners	01-03-1999	15 years	£12,0	No
Infrastructures	UK	PRIORITY SCHOOL BUILDING PROGRAMME	Several partners	20-07-2011	27 Years	£1.000,0	No
Infrastructures	UK	NEW PRISONS FRAMEWORK	G4S/Carillion; Bouygues	23-10-2009	40 years	£1.800,0	Yes
Infrastructures	UK	UK Military Flying Training System (UKMFTS)	Ascent (Babcok, Lockeed Martim UK Ltd); Vector	01-06-2008	25 years	£635,0	Yes
Infrastructures	UK	Future Strategic Tanker Aircraft	AirTanker Ltd (Babcock, Cobham, Airbus Group, Rolls-Royce and Thales)	27-03-2008	27 years	£2.500,0	Yes
Infrastructures	UK	Long term replacement of marine services vessels for HM Naval Bases.	Serco/Denholm	19-12-2007	15 years	£1.000,0	Yes
Infrastructures	UK	Highways Agency - National Roads Telecommunications Services	GeneSyS	19-09-2005	10 years	£490,0	No
Infrastructures	UK	MoD - Future C Vehicles	ALC (Babcock, Amey, Civica, TMS, PDM Training Solutions, Dytecna)	10-06-2005	15 years	£600,0	Yes
Infrastructures	UK	Police Information Technology Organisation - Airwave	Several partners	01-04-2005	19 years	£1.470,0	No
Infrastructures	UK	Project Aquatrine - Package C	C2C	15-12-2004	25 years	£154,0	No
Infrastructures	UK	Project Aquatrine - Package B	Thames Water Nevis	12-11-2004	25 years	£86,4	No
Infrastructures	UK	Records Storage and Management - Hayes PPP Project	TNT/Prologis	18-09-2003	10 years	£25,0	Yes
Infrastructures	UK	Project Aquatrine - Package A	Brey Utilities	20-05-2003	25 years	£150,0	No
Infrastructures	UK	Material Handling Equipment (MHE) Service - Follow On	Several partners	02-05-2002	8 years	£80,0	No
Infrastructures	UK	Heavy Equipment Transportation	Fasttrax	14-12-2001	20 years	£58,0	No
Infrastructures	UK	National Air Traffic Services Ltd (NATS)	Novares Consortium (Lockheed Martin UK Ltd, Air New Zealand, Apax)	26-07-2001	10 years	£800,0	Yes
Infrastructures	UK	Expeditionary Camp Infrastructure	Expeditionary Camp Infrastructure	07-06-2001	10 years	£60,0	No
Infrastructures	UK	Royal Navy Fleet Communications Service	Several partners	01-06-2000	27 years	£280,0	No
Infrastructures	UK	The Royal Logistic Corps	Vosper Thornycroft/AMEC/Sodexho	29-01-2001	20 years	£200,0	Yes
Infrastructures	UK	Tri-Service White Fleet	FleetServ	26-01-2001	10 years	£40,0	No
Infrastructures	UK	Department for Work & Pensions - Network and Office Services	Affinity Consortium	23-11-2000	5 years	£8,8	No
Infrastructures	UK	Home Office - IT 2000 (Sirius)	Sirius Consortium	10-10-2000	10 years	£24,7	No
Infrastructures	UK	Child Support Agency - IT System	Affinity Consortium	08-08-2000	10 years	£2,8	No

* Indicative value in million of Pounds

Source: Public- Private Partnerships Bulletin, www.partnershipsbulletin.com

Type	Country	Concession Description	Private Partner	Starting Date	Term of the Partnership	Investment *	Quoted?
Infrastructures	UK	Department for Work & Pensions - Strategic Outsourcing	Affinity Consortium	08-08-2000	10 years	£32,9	No
Infrastructures	UK	Defence Electronic Commerce Service (DECS)	Several partners	21-07-2000	10 years	£9,0	No
Infrastructures	UK	Tri-Service Materials Handling Equipment	PHH Vehicle Management Services Plc/Boss Group Limited	06-06-2000	10 years	£32,0	Yes
Infrastructures	UK	Foreign and Commonwealth Offices - Global Telecommunications	Several partners	10-05-2000	10 years	£73,9	No
Infrastructures	UK	Quantum IT Project	PRISM/BT consortium	29-02-2000	20 years	£60,0	No
Infrastructures	UK	Royal Navy Fire Fighting Training Units (FFTU)	Several partners	01-04-1999	20 years	£23,0	No
Infrastructures	UK	Employment Service - Human Resources Partnership	Rebus Human Resources Ltd/Norwich Systems and Accounting Ltd	03/02/1999	10 years	£6,0	No
Infrastructures	UK	Light Aircraft Flying Training (LAFT)	Several partners	30-01-1999	10 years	£20,0	No
Infrastructures	UK	RAF Messaging Services	Several partners	01-11-1998	10 years	£12,0	No
Infrastructures	UK	Coal Authority - IT System	Several partners	31/07/1997	8 years	£3,0	No
Infrastructures	UK	Attack Helicopter Training Service	Aviation Training International Ltd	30-07-1998	20 years	£165,0	No
Infrastructures	UK	Employment Service - IT Partnership	Several partners	24-06-1998	10 years	£217,0	No
Infrastructures	UK	Radiocommunications Agency - Strategic Partnership	Several partners	08-06-1998	10 years	£15,0	No
Infrastructures	UK	Countryside Agency - SPIRIT	Several partners	19-11-1997	7 years	£9,5	No
Infrastructures	UK	Department for Work and Pensions - PRIME	Land Securities Trillium; Mapeley Holdings Ltd	24-12-1997	20 years	£250,0	Yes
Infrastructures	UK	ARAMIS - Resource Accounting	CSL Group Ltd/Unisys/Deloitte & Touche; Electronic Data Systems	22-12-1997	9 years	£39,5	Yes
Infrastructures	UK	Armed Forces Personnel Administration Agency (AFPAA)	Several partners	13-11-1997	12 years	£264,0	No
Infrastructures	UK	Medium Support Helicopter Aircrew Training Facility (MSHATF)	CVS Aircrew Training (CVS) plc	16-10-1997	20 years	£114,0	No
Infrastructures	UK	Defence Fixed Telecommunications System - DFTS	Inca Consortium; Rampart	01-07-1997	10 years	£70,0	No
Infrastructures	UK	Foreign and Commonwealth Office - MINERVA Electronic Archive	Several partners	31-12-1996	10 years	£1,6	No
Infrastructures	UK	Training Administration Financial Management Information Service (TAFMIS)	Several partners	05-08-1996	10 years	£14,0	No
Infrastructures	UK	RAF White Fleet	Several partners	01-06-1996	6 years	£35,0	No
Infrastructures	UK	Roll-On/Roll-Off (RORO) Strategic Sealift	Sealion	27-06-2002	22 years	£175,0	No
Infrastructures	UK	Flight Simulation & Synthetic Trainers (FLASTS)	Several partners	01-10-2002	25 years	£94,0	No

* Indicative value in million of Pounds

Source: Public- Private Partnerships Bulletin, www.partnershipsbulletin.com

Annex 4 – Analysis and Descriptive Statistics Tables

Table 5 – Central Government Debt (as % of GDP) and Market Capitalization by country considered in the data population

Country	Central Government Debt (% of GDP) *	Central Government Debt (% of GDP) Ranking	Market Capitalization **	M. Cap. Ranking
Belgium	89,5	11	300.058	9
Croatia	52,1	5	21.560	16
Denmark	47,2	3	224.856	10
Finland	50,8	4	158.687	12
France	101,1	13	1.823.340	2
Germany	55,2	8	1.486.310	3
Greece	163,6	17	44.584	15
Ireland	120,5	14	109.014	13
Italy	127,2	15	480.453	7
Netherlands	67,9	10	651.004	6
Poland	53,8	7	177.730	11
Portugal	129	16	65.530	14
Russia	9,4	1	874.659	5
Slovakia	53,5	6	4.611	17
Spain	65,9	9	995.095	4
Turkey	45,1	2	308.775	8
UK	97,2	12	3.019.470	1

* Source: Eurostat, OECD, World Bankd and IMF (Values of 2012)
** Indicative value in million of Dollars and Source: Index Mundi Website (Values of 2012)

Table 6 – Descriptive Statistics for the tested variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Quoted	239	0	1	,35	,477
Investment *	239	2,1	3.525,8	356,7	538,1
Environment / Energy	239	0	1	,13	,337
Healthcare	239	0	1	,13	,337
Infrastructures	239	0	1	,37	,483
Transportation (1) - Road	239	0	1	,26	,437
Transportation (2) - Railway	239	0	1	,04	,201
Date	239	1995	2012	2005,22	4,844
Length	239	5	75	27,44	11,822
Public Finances	239	9,4	163,6	102,481	30,0154
Market Capitalization	239	4.610,59	3.019.470,00	1.089.952,80	1.144.605,27
Vinci	239	0	1	,04	,191
Boygues	239	0	1	,03	,180
Eiffage	239	0	1	,03	,157
Market Capitalization Rank	239	1	17	7,63	5,706
Big_french	239	0,00	1,00	,0962	,29553
Valid N (listwise)	239				

Table 7 – Correlation matrix for the tested variables

Correlations

		Quoted	Investment *	Environment / Energy	Healthcare	Infrastructures	Transportation (1) - Road	Transportation (2) - Railway	Date	Length	Public Finances	Vinci	Boygues	Eiffage	Big_french	Market Capitalization Rank	Market Capitalization
Quoted	Pearson Correlation	1	,230**	-,282**	-,072	,172**	,016	,023	,293**	,154*	-,317**	,271**	,255**	,220**	,447**	-,234**	,096
	Sig. (2-tailed)		,000	,000	,265	,008	,800	,722	,000	,017	,000	,000	,000	,001	,000	,000	,139
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Investment *	Pearson Correlation	,230**	1	-,113	-,191**	-,097	,197**	,206**	,096	,216**	,061	,038	,088	,123	,143*	,049	,004
	Sig. (2-tailed)	,000		,081	,003	,135	,002	,001	,137	,001	,345	,556	,177	,058	,027	,454	,946
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Environment / Enerby	Pearson Correlation	-,282**	-,113	1	-,149*	-,295**	-,226**	-,081	-,260**	,107	,341**	-,076	-,072	-,062	-,126	,416**	-,342**
	Sig. (2-tailed)	,000	,081		,021	,000	,000	,214	,000	,099	,000	,240	,269	,340	,052	,000	,000
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Healthcare	Pearson Correlation	-,072	-,191**	-,149*	1	-,295**	-,226**	-,081	,127	-,143*	-,034	-,076	-,003	,018	-,042	-,001	-,096
	Sig. (2-tailed)	,265	,003	,021		,000	,000	,214	,050	,027	,597	,240	,968	,786	,523	,984	,139
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Infrastructures	Pearson Correlation	,172**	-,097	-,295**	-,295**	1	-,447**	-,160*	-,095	-,416**	-,357**	,168**	,051	,044	,163*	-,673**	,730**
	Sig. (2-tailed)	,008	,135	,000	,000		,000	,014	,142	,000	,000	,009	,434	,500	,012	,000	,000
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Transportation (1) - Road	Pearson Correlation	,016	,197**	-,226**	-,226**	-,447**	1	-,122	,154*	,172**	-,019	-,065	,051	-,033	-,028	,233**	-,290**
	Sig. (2-tailed)	,800	,002	,000	,000	,000		,059	,017	,008	,771	,314	,431	,616	,663	,000	,000
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Transportation (2) - Railway	Pearson Correlation	,023	,206**	-,081	-,081	-,160*	-,122	1	,094	,049	,053	,068	-,039	,100	,074	-,005	-,054
	Sig. (2-tailed)	,722	,001	,214	,214	,014	,059		,146	,452	,419	,292	,550	,123	,258	,941	,402
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Date	Pearson Correlation	,293**	,096	-,260**	,127	-,095	,154*	,094	1	,278**	-,224**	,168**	,184**	,159*	,305**	-,006	-,220**
	Sig. (2-tailed)	,000	,137	,000	,050	,142	,017	,146		,000	,000	,009	,004	,014	,000	,922	,001
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Length	Pearson Correlation	,154*	,216**	,107	-,143*	-,416**	,172**	,049	,278**	1	,172**	,123	,025	-,008	,090	,395**	-,485**
	Sig. (2-tailed)	,017	,001	,099	,027	,000	,008	,452	,000		,008	,058	,706	,898	,166	,000	,000
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Public Finances	Pearson Correlation	-,317**	,061	,341**	-,034	-,357**	-,019	,053	-,224**	,172**	1	-,043	-,012	-,028	-,050	,589**	-,359**
	Sig. (2-tailed)	,000	,345	,000	,597	,000	,771	,419	,000	,008		,510	,858	,665	,445	,000	,000
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
vinci	Pearson Correlation	,271**	,038	-,076	-,076	,168**	-,065	,068	,168**	,123	-,043	1	-,037	-,032	,606**	-,192**	,121
	Sig. (2-tailed)	,000	,556	,240	,240	,009	,314	,292	,009	,058	,510		,571	,625	,000	,003	,063
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
boygues	Pearson Correlation	,255**	,088	-,072	-,003	,051	,051	-,039	,184**	,025	-,012	-,037	1	-,030	,570**	-,188**	,144*
	Sig. (2-tailed)	,000	,177	,269	,968	,434	,431	,550	,004	,706	,858	,571		,646	,000	,004	,026
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Eiffage	Pearson Correlation	,220**	,123	-,062	,018	,044	-,033	,100	,159*	-,008	-,028	-,032	-,030	1	,492**	-,093	,032
	Sig. (2-tailed)	,001	,058	,340	,786	,500	,616	,123	,014	,898	,665	,625	,646		,000	,152	,626
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
big_french	Pearson Correlation	,447**	,143*	-,126	-,042	,163*	-,028	,074	,305**	,090	-,050	,606**	,570**	,492**	1	-,288**	,182**
	Sig. (2-tailed)	,000	,027	,052	,523	,012	,663	,258	,000	,166	,445	,000	,000	,000		,000	,005
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Market Capitalization rank	Pearson Correlation	-,234**	,049	,416**	-,001	-,673**	,233**	-,005	-,006	,395**	,589**	-,192**	-,188**	-,093	-,288**	1	-,905**
	Sig. (2-tailed)	,000	,454	,000	,984	,000	,000	,941	,922	,000	,000	,003	,004	,152	,000		,000
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239
Market Capitalization	Pearson Correlation	,096	,004	-,342**	-,096	,730**	-,290**	-,054	-,220**	-,485**	-,359**	,121	,144*	,032	,182**	-,905**	1
	Sig. (2-tailed)	,139	,946	,000	,139	,000	,000	,402	,001	,000	,000	,063	,026	,626	,005	,000	
	N	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239	239

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 8 – Model 1

Variables in the Equation

		Coefficients (B)	S.E.	Sig.	Exp(B)
Step 1[a]	Investment	,001	,000	,005 ***	1,001
	EnvironmentEnergy	-20,334	6.895,252	,998	,000
	Healthcare	-,863	,501	,085 *	,422
	Transportation1Road	-,915	,384	,017 **	,400
	Transportation2Railway	-,989	,819	,227	,372
	Date	,105	,039	,007 ***	1,111
	Length	,029	,015	,045 **	1,030
	PublicFinances	-,020	,006	,001 ***	,980
	Constant	-210,002	78,599	,008 ***	,000

a. Variable(s) entered on step 1: Investment, EnvironmentEnergy, Healthcare, Transportation1Road, Transportation2Railway, Date, Length, PublicFinances. ***, **; * indicate that the reported coefficient is statistically significant at the 1%, 5% and 10%. The independent variable, Yi, is a dummy variable with the value 1 when the company is quoted. The number of observations refers to the full sample of 239 projects.

Table 9 – Model 2

Variables in the Equation

		Coefficients (B)	S.E.	Sig.	Exp(B)
Step 1[a]	Investment	,001	,000	,006 ***	1,001
	EnvironmentEnergy	-20,324	6.897,252	,998	,000
	Healthcare	-,855	,525	,103	,425
	Transportation1Road	-,906	,420	,031 **	,404
	Transportation2Railway	-,983	,826	,234	,374
	Date	,106	,041	,010 ***	1,112
	Length	,030	,016	,065 *	1,030
	PublicFinances	-,020	,006	,001 ***	,980
	MarketCapitalization	,000	,000	,956	1,000
	Constant	-211,300	82,110	,010 **	,000

a. Variable(s) entered on step 1: Investment, EnvironmentEnergy, Healthcare, Transportation1Road, Transportation2Railway, Date, Length, PublicFinances, MarketCapitalization. ***, **; * indicate that the reported coefficient is statistically significant at the 1%, 5% and 10%. The independent variable, Yi, is a dummy variable with the value 1 when the company is quoted. The number of observations refers to the full sample of 239 projects.

Table 10 – Model 3

Variables in the Equation

		Coefficients (B)	S.E.	Sig.	Exp(B)
Step 1[a]	Investment	,001	,000	,006 ***	1,001
	EnvironmentEnergy	-20,113	6.854,394	,998	,000
	Healthcare	-,770	,507	,129	,463
	Transportation1Road	-,767	,409	,061 *	,464
	Transportation2Railway	-,975	,834	,242	,377
	Date	,110	,040	,006 ***	1,116
	Length	,035	,016	,027 **	1,035
	PublicFinances	-,017	,007	,012 **	,984
	MarketCapitalization_A	-,044	,040	,272	,957
	Constant	-219,472	79,695	,006 ***	,000

a. Variable(s) entered on step 1: Investment, EnvironmentEnergy, Healthcare, Transportation1Road, Transportation2Railway, Date, Length, PublicFinances, MarketCapitalization_A. ***, **; * indicate that the reported coefficient is statistically significant at the 1%, 5% and 10%. The independent variable, Yi, is a dummy variable with the value 1 when the company is quoted. The number of observations refers to the full sample of 239 projects.

Table 11 – Model 4

Variables in the Equation

		Coefficients (B)	S.E.	Sig.	Exp(B)
Step 1[a]	Investment	,001	0,000	,012 **	1,001
	Environment / Energy	-20,012	7.065,520	,998	0,000
	Healthcare	-,755	0,561	,179	0,470
	Transportation1Road	-,796	0,420	,058 *	0,451
	Transportation2Railway	-,748	0,901	,407	0,474
	Date	,034	0,044	,433	1,035
	Length	,036	0,016	,025 **	1,036
	PublicFinances	-,023	0,006	,000 ***	0,977
	Vinci	21,298	13.216,327	,999	N/A
	Boygues	22,010	13.107,781	,999	N/A
	Eiffage	21,674	15.719,732	,999	N/A
	Constant	-67,918	87,362	,437	0,000

a. Variable(s) entered on step 1: Investment, EnvironmentEnergy, Healthcare, Transportation1Road, Transportation2Railway, Date, Length, PublicFinances, Vinci, Boygues, Eiffage. ***, **; * indicate that the reported coefficient is statistically significant at the 1%, 5% and 10%. The independent variable, Yi, is a dummy variable with the value 1 when the company is quoted. The number of observations refers to the full sample of 239 projects.

Table 12 – Model 5

Variables in the Equation

		Coefficients (B)	S.E.	Sig.	Exp(B)
Step 1[a]	Investment	,001	,000	,012 **	1,001
	Environment / Energy	-20,013	7.066,419	,998	,000
	Healthcare	-,755	,561	,179	,470
	Transportation1Road	-,796	,420	,058 *	,451
	Transportation2Railway	-,748	,901	,407	,474
	Date	,034	,044	,433	1,035
	Length	,036	,016	,025 **	1,036
	PublicFinances	-,023	,006	,000 ***	,977
	BigFrench	21,695	7.957,108	,998	N/A
	Constant	-67,918	87,362	,437	,000

a. Variable(s) entered on step 1: Investment, EnvironmentEnergy, Healthcare, Transportation1Road, Transportation2Railway, Date, Length, PublicFinances, big_french. ***, **; * indicate that the reported coefficient is statistically significant at the 1%, 5% and 10%. The independent variable, Yi, is a dummy variable with the value 1 when the company is quoted. The number of observations refers to the full sample of 239 projects.

Annex 5 – Portuguese analysis of the mandatory requirements for quotation for private companies on PPPs contracts

		Minimum requirements conditions for quotation in Portugal							
Private Partner	**PPP Phase**	***Three years of activity***	***Disclosure reports for the least three years***	***Disclosure semiannual reports for the least three years***	***Appropriate degree of dispersion by public (25 % of the share capital)***	***Expected Market Capitalization of at least 1 million euros***	***Financial Statements audited by a registered auditor in CMVM***	***Observations***	**Total of the fullfill requirements by company**
Águas do Noreste, SA	Management	Yes	No	No	No	Yes	Yes		3
Águas Públicas do Alentejo, SA	Management	Yes	Yes	No	No	Yes	Yes		4
Águas da Região de Aveiro, SA	Management	Yes	No	No	No	Yes	Yes		3
Algar, SA	Management	Yes	Yes	No	No	Yes	Yes		4
Amarsul, SA	Management	Yes	Yes	No	No	Yes	Yes		4
Ersuc, SA	Management	Yes	No	No	No	Yes	Yes		3
Resinorte - Valorização e Tratamento Resíduos Sólidos, SA	Management	Yes	Yes	No	No	Yes	Yes		4
Resiestrela - Valorização e Tratamento Resíduos Sólidos, SA	Management	Yes	Yes	No	No	Yes	Yes		4
Resulima, SA	Management	Yes	Yes	No	No	Yes	Yes		4
Suldouro, SA	Management	Yes	No	No	No	Yes	Yes		3
Valnor, SA	Management	Yes	Yes	No	No	Yes	Yes		4
Valorlis, SA	Management	Yes	No	No	No	Yes	Yes		3
Valorminho, SA	Management	Yes	Yes	No	No	Yes	Yes		4
Valorsul, SA	Management	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Sanest, SA	Management	Yes	No	No	No	Yes	Yes		3
Simarsul, SA	Management	Yes	Yes	No	No	Yes	Yes		4
Simlis, SA	Management	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Simria, SA	Management	Yes	No	No	No	Yes	Yes		3
Simtejo, SA	Management	Yes	No	No	No	Yes	Yes		3
Simdouro - Saneamento do Grande Porto, S. A	Management	Yes	Yes	No	No	Yes	Yes		4
Transgás Armazenagem, SA	Management	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Lisboagás Soc. Prod. Distrib. Gás, SA	Management	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Lusitaniagás-Comp. Gás do Centro, SA	Management	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Setgás - Soc. Prod. Distrib. Gás, SA	Management	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Portgás - Soc. Prod. Distrib. Gás, SA	Management	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A

		Minimum requirements conditions for quotation in Portugal							
Private Partner	**PPP Phase**	***Three years of activity***	***Disclosure reports for the least three years***	***Disclosure semiannual reports for the least three years***	***Appropriate degree of dispersion by public (25 % of the share capital)***	***Expected Market Capitalization of at least 1 million euros***	***Financial Statements audited by a registered auditor in CMVM***	***Observations***	**Total of the fullfill requirements by company**
REN Atlântico, SA	Management	Yes	Yes	No	No	Yes	Yes		4
REN Armazenagem, SA	Management	Yes	Yes	No	No	Yes	Yes		4
Beiragás-Companhia das Beiras, SA	Management	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Tagusgás - Empresa Gás Vale do Tejo, SA	Management	Yes	No	No	No	Yes	Yes		3
REN Gasodutos, SA	Management	Yes	Yes	No	No	Yes	Yes		4
REN - Rede Eléctrica Nacionnal, SA	Management	Yes	Yes	Yes	Yes	Yes	Yes		6
EDP - Distribuição Energia, SA	Management / Construction	Yes	No	No	No	Yes	Yes		3
EDP	Management / Construction	Yes	Yes	Yes	Yes	Yes	Yes		6
SIRESP - Redes Digitais de Seg. e Emergência	Management	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Auto-Estradas XXI - Subconcessionária Transmontana, SA	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
AENOR Douro - Estradas do Douro, SA	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Auto-Estradas do Marão	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
SPER - Sociedade Portuguesa para a Construção e Exploração Rodoviária, SA	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
VBT - Vias do Baixo Tejo, SA	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
AELO - Auto-estradas do Litoral Oeste, SA	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Rotas do Algarve Litoral, SA	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Ascendi Pinhal Interior - Auto-estradas do Pinhal Interior, SA	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Elos - Ligações de Alta Velocidade	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
SGHL - Soc. Gestora do Hospital de Loures, SA	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
HL - Sociedade Gestora do Edifício, SA	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
Escala Vila Franca - Gestora do Edifício, SA	Construction	Yes	N/A	N/A	N/A	N/A	N/A	Financial information unavailable	N/A
IBERDROLA Portugal	Construction	Yes	Yes	Yes	Yes	Yes	Yes		6
Endesa	Construction	Yes	Yes	Yes	Yes	Yes	Yes		6
Total of companies that fullfill each requirement for quotation		48	17	4	4	27	27	21	106
Percentage of companies that fullfill each requirement for quotation		100%	35%	8%	8%	56%	56%	44%	**37%**

Source: Companies public available information (Can be checked in the References)