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*Original*

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**Risk factors influencing the debt leverage of Project Financing initiatives in the energy industry**

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3 **Risk factors influencing the debt leverage of Project Financing initiatives in the energy**  
4 **industry**  
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8 **Purpose** –This paper contributes to understanding the crucial influence of risks on the capital  
9 structure of Project Financing (PF) initiatives in the energy sector.  
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11 **Design/methodology/approach** – The debt leverage of a capital investment is selected as the  
12 response variable and its relation with select identified risk factors is examined using a regression  
13 analysis on a dataset of 72 projects carried out all over the world in the energy industry.  
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16 **Findings** – Results have highlighted that the debt leverage is significantly influenced by several  
17 sources of risk. Country, Project, and Special Purpose Vehicle related risks have been shown to  
18 have an impact on the debt leverage of a PF scheme.  
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21 **Research limitations/ Implications** – The results could support both investors and lenders to better  
22 define the financial leverage of projects delivered under a PF mechanism. In particular, the study  
23 could help to have a better understanding of the main factors that influence the debt leverage in PF  
24 initiatives.  
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27 **Originality/value** – This paper contributes to filling the lack of works addressing the relationship  
28 between risk factors and capital structure in PF projects. In this way, this research leads to a better  
29 understanding of the risk factors that influence the capital structure of a PF initiative and they have  
30 therefore been proposed as a basis for the establishment of improved methods to design refined  
31 capital structures.  
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34 **Keywords** – Public Private Partnership, Build Operate Transfer, Regression Analysis, Risk  
35 Analysis  
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42 **Introduction:**

43 Project Financing (PF) is referred to as a mechanism to privately fund design, building and  
44 operations of a public facility for a predetermined concession period (Iossa et al., 2007). At the end  
45 of the concession period, the ownership is transferred back to the public authority (Malini, 1999). In  
46 return for its services, a project company can collect revenues directly from the final users or charge  
47 a shadow toll paid by the government on the behalf of the users. This financing system facilitates  
48 the development of capital projects with funds from outside the public budget allocation, while  
49 transferring risks to the private sector (Kang et al., 2011).  
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3 PF is largely used to develop public infrastructures, utilities and social facilities in various sectors.

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5 In particular, for capital projects in the energy sector, PF can be considered as a suitable solution as  
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7 power projects often require financial and operational capabilities by experienced private operators.

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10 With this regard, PF initiatives are seen by many public organizations as a suitable way to leverage  
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12 limited public funding with private finance and procure expanded power capacity required by an  
13  
14 increasing demand especially in some areas of the world (Algarni et al., 2007; Painuly, 2009).

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16 However, capital projects in the energy sector are exposed to a high level of risk that impacts on  
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18 project performance, profitability and financing (Thillairajan and Behera, 2016). In particular, risk  
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20 seems to play a key role in determining the financial leverage of a PF scheme as a result of  
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22 assessing the capacity of the predicted project cash flows to repay its debt obligations (De Marco  
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24 and Mangano, 2013). In other words, the definition of an optimal capital structure for a PF initiative  
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26 becomes a difficult issue as the lenders would tend to minimize debt according to risk profile, while  
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28 equity investors would seek for greater debt in order to reduce their capital injection and obtain a  
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30 greater return on equity and minimize their risk. Some studies have investigated the association  
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32 between risk and some factors of a PF initiative, such as the concession duration or risk allocation  
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34 between the private and the public sector (Jin, 2010; Zhang, 2005). However, little research has  
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36 been carried out to demonstrate the relationship that may exist between risk and capital structure  
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38 and, in particular, to study the effects of the most important sources of risk on determining the debt  
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40 leverage of a PF initiative for energy sector projects.  
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45 In order to bridge this research gap, an empirical analysis on the capital structure of a sample of 72  
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47 international PF energy projects is carried out in order to identify the relevant risk factors that might  
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49 have significant relationship with the debt to equity ratio. This is expected to contribute to a better  
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51 definition of the capital structure with expected benefits for both lenders and equity investors.  
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54 To this end, the paper is structured as follows. First, an overview of the current literature is  
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56 presented. Second, the main risks related to the capital structure are identified in the research  
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58 methodology section and the risk model is proposed in order to assume the relationship with the  
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3 debt to equity ratio. After that, the dataset and the linear regression analysis are shown. Then,  
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5 discussions and implications of results are addressed to envisage potential applications for  
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7 enhancing the capital structure. Finally, conclusions are drawn together with future research  
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9 directions.  
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## 11 12 13 14 **Literature Review**

### 15 16 *Risk in PF*

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18 PF projects are often complex in nature with burdening risk and highly leveraged capital structures.  
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20 Lenders, who provide the greatest portion of financing in the form of nonrecourse or limited-  
21  
22 recourse debt, are typically concerned about the risks inherent with financing, developing and  
23  
24 operating PF initiatives (Boeing Singh and Kalindi, 2009). Therefore, PF schemes require a proper  
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26 and careful risk analysis and risk allocation between the public party and the Special Purpose  
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28 Vehicle (SPV) or project company (De Marco and Mangano 2013). This analysis is often more  
29  
30 complex than in traditional construction contracts (Pellegrino et al., 2013). Furthermore, the  
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32 stakeholders involved in a PF scheme may have diverging interests and objectives (Demirag et al.  
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34 2011). Also, risk is an important element in the definition of the most appropriate level of equity  
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36 and debt sources of financing required as highlighted by Ng et al. (2010). In fact, the amount of  
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38 debt the project can raise is a function of the expected capacity of its cash flows to serve any debt  
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40 obligations and its creditworthiness, which depends on aspects such as the inherent value of its  
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42 assets, its expected profitability, the amount of risk borne by the SPV, and the risk profile of the  
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44 projected cash flows (Finnerty, 2013).  
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50 The bankability of a project is often evaluated via the Debt Service Coverage Ratio (DSCR). This  
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52 ratio assesses the capacity of project's cash flow to repay the debt service during the lifecycle of the  
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54 project. It is defined as the ratio between the cash available before the debt repayment and the total  
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56 amount of debt to be repaid in the same period (Borgonovo and Gatti, 2013). The minimum DSCR  
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58 needs to be greater than one as to meet the debt capacity. However, most lending institutions  
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3 usually require higher values based on projected cash flows and expected risk of the project (De  
4  
5 Marco, et al., 2012b).

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7 In this context, available literature offers studies aimed at analyzing the risks inherent with PF  
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9 initiatives and providing linkages between risk and capital structure. The mix of funding sources for  
10  
11 a PF project varies according to the nature and scale of the project (Wei and Gosling, 2013) and the  
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13 task of designing the capital structure requires both private sponsors and lenders to decide how  
14  
15 much should be provided in the form of equity financing and how much should be borrowed from  
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17 the lenders, also based on the level of available public financing, if applicable. As typical risk-  
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19 averse institutions, lenders are concerned with project risks and care about measures to mitigate  
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21 risks that could influence the debt servicing capability (Boeing Singh and Kalidindi, 2009). Debt  
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23 has advantages, such as tax shield, and disadvantages, such as the distress caused by debt  
24  
25 obligations. Due to the attractiveness of borrowed fund, equity investors tend to include debt fund  
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27 into PF projects as much as possible. It is typical for infrastructure PF projects to have from 15 to  
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29 20 years of loan repayment, depending on the nature of the project and its future cash flow (Choi et  
30  
31 al., 2010). For long, PF projects were funded with up to 80% or even 90% of debt on total funding  
32  
33 required, but the impact of recent financial crisis and credit crunch has increased the equity level  
34  
35 (Demirag et al., 2011) up to 75% (Carbonara and Pellegrino, 2014). However, a typical debt to  
36  
37 equity ratio is usually in the order of 70/30 (Cuttaree et al., 2011).

#### 38 39 40 41 42 ***PF in energy projects***

43  
44 In periods of bad economy, the shortage of public finance and limits imposed on public budgets,  
45  
46 have been forcing many countries to cut traditional investments in energy projects (De Marco et al.,  
47  
48 2016). as a consequence, there is an increasing interest in the application of PF schemes in the  
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50 energy sector. For example, just in Europe, approximately one trillion euros are expected to be  
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52 spent in energy and power capital investments (Rehme et al., 2015). In developed countries the need  
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54 for power plants is driven by revamping or replacing existing power stations capacity, while in  
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56 emerging countries electricity consumption is tremendously growing. Another important driving  
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3 factor is the transition to low-carbon form of generation (Blyth et al., 2015). Thus, new renewable  
4 energy plants are required (Shen-fa, and Xiao-ping 2009).

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7 However, only few PF initiatives in the energy sector reach their financial close (Kann, 2009) even  
8 if PF allows governments to secure an infrastructure without immediately raising taxes or public  
9 debt (Khmel and Zhao, 2016). Therefore, the success of PF is based, on the one hand, on an  
10 increasing demand for infrastructures (De Marco et al., 2012a) and, on the other hand, on public  
11 financial and budgetary constraints. Furthermore, a successful PF initiative is based on the  
12 consideration of all risks that a project faces during its life cycle (De Marco et al., 2017). In fact,  
13 unexpected changes related to project costs, debt servicing, dividend payments, construction delays,  
14 cash flow generated by the project can bring to heavy deficits (Nikolic et al., 2011).

### 25 **Research Methodology**

26  
27 The research is conducted through the following steps. First, based on the literature analysis the  
28 main risk factors that are likely to impact on the debt leverage in PF energy projects are identified.  
29 To this end, each risk source is listed in association with a proxy parameter, which is in turn  
30 measured by a numerical indicator. Second, data are gathered via public web sources and an  
31 exploratory data analysis is carried out. Finally, after assuming that the debt leverage is the response  
32 variable and the risk parameters are the independent factors, a linear regression analysis is  
33 completed using in order to capture the relationship between the project risk profile and the debt to  
34 equity ratio, which represents the capital structure of a PF investment.

### 47 **Risk Model**

48  
49 Table 1 reports a classification of risk sources with associated parameters and indicators that are  
50 supposed to influence the debt leverage. All the risks are grouped into areas of origin namely:  
51 country, financial, revenue, project and SPV-related risks.

58 **Table 1. Risks Identification**

### ***Country Risk***

The country sources of risk are related to the context of political events and government policies that could jeopardize the profitability of a project due to delayed authorizations and approvals (Song et al., 2013). These kinds of risks are typically associated with the governments' corruption (Maslyukivska and Sohail, 2007) and poor government decision making processes (Li et al., 2005). High corrupted countries and low levels of political stability can make investors less willing to finance their projects. This category also covers risks arising from unanticipated regulatory changes, such as changes in taxation or foreign investment laws (Hainz and Kleimeier, 2012).

The country risk is here described by means of two parameters, namely: the Country Attractiveness and the Political Environment. The Country Attractiveness refers to as the capability of a country to attract private capital and it is measured via the Government Effectiveness (GE) and the Regulatory Quality indexes. GE indicates the perception of the quality of public services and the quality of policy implantation, while the RQ refers to the ability of a government to formulate regulations that promote the private sector development (World Bank, 2015). GE and RQ both range from -2.5 to 2.5 with 2.5 indicating high quality.

The political environment is measured by the Country Stability Index (CSI) that is aimed at capturing the perceptions of the likelihood of political instability and political violence (World Bank, 2015). CSI ranges from -2.5 indicating scarce quality, up to +2.5 indicating high quality. The parameters associated with the country risk are expected to positively impact the equity share in the sense that low risk environments are able to attract more private capital to develop PF initiatives.

### ***Financial Risk***

Financial risks appear to be crucial since they may heavily impact on the project cash flows and, in turn, affect its profitability (Xenidis and Angelides, 2005). One of the main elements associated with the financial risk is the inflation rate (Estache et al., 2007) as it can negatively influence the purchasing power and the return on investment. The higher the inflation, the higher the project costs

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3 and consequently the debt leverage tends to increase since the required fund are greater. The  
4  
5 inflation is measured through the inflation rate (INFL), with historical values as reported by Rate  
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7 Inflation (2016).  
8

### 9 10 ***Revenue Risk***

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12 Revenue risk is associated with the commercial success of a project and the potential changes on the  
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14 revenue streams that may have an impact on the project cash flow (Boeng Sing and Kalidindi,  
15  
16 2006). The cash flow is typically used by private investors to evaluate projects (Olson et al., 2005).  
17  
18 An example of revenue risk is possible fluctuation of electricity tariffs paid by the final users in  
19  
20 power projects. Revenue risk largely depends on the economic environment, wherein a project is  
21  
22 developed for measuring the ability of the end users, or offtake purchasers, to pay for the energy  
23  
24 that is produced by the plant. This parameter is measured via the GDP Growth Rate (GDP) in order  
25  
26 to represent either positive or negative commercial spending environments. A high level of GDP  
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28 Growth Rate stands for a less risky environment in the sense that positive GDP rates are associated  
29  
30 with increased demands of energy. The higher are the expected revenues the more willing are the  
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32 lending institutions to inject debt in a project. Thus, the debt leverage can be increased and more  
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34 exploited.  
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### 37 38 ***Project Risk***

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40 Project risk can refer to development risks that may cause schedule delays and cost overruns, such  
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42 as design and construction risks (Thuyet et al., 2007). . Development risks generally increase with  
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44 the size of the project investment, due to the number of involved stakeholders, execution tasks,  
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46 coordination actions, and communications. Investment (INV) is the indicator selected to measure  
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48 the project size. The higher the investment, the higher the leverage because there is usually the  
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50 opportunity of use more source of debt (Khmel and Zhao, 2016).  
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54 In addition, project risks are related to complexity, in terms of construction site conditions,  
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56 sophisticated design, the use of new construction technologies, etc. Therefore, it can be assumed  
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58 that a long construction duration is a crucial aspect in a complex project (Hoffmann et al., 2007).  
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3 For this reason, the Construction Duration (CDUR) indicator, expressed months is taken into  
4 account to represent the project complexity. Shorter construction periods allow to obtain cash flows  
5 earlier (Gupta et al., 2013) with positive effect on the riskiness of the project. Under these  
6 conditions a lending institution is more will to invest in a project. Therefore, there is a negative  
7 expected relationship with the debt leverage.  
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10 Project risk is also related to the project's ability to generate a sufficient cash flow for repayment of  
11 debt obligations and for ensuring acceptable levels of profit. In the proposed model, the capability  
12 of creating this cash flow stream is measured via the Concession Period (CP), defined as the length  
13 of the concession contract, expressed in years, when an SPV runs the project operations. This  
14 indicator is mainly related to the recovery of the investment. Shorter concession periods are usually  
15 associated with huge cash flows. However, short concession periods leads to a greater level of risk  
16 in case of delays or unexpected negative events. On the contrary, a long concession duration can  
17 bring much uncertainty to the project (Sarmiento and Rennegoo, 2016), but a longer concession  
18 period is more beneficial for the private investor, who can benefit from more profits (Carbonara et  
19 al., 2014).  
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### 36 ***SPV Risk***

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38 The main characteristics of the SPV are likely to influence the decisions of the investors. This is due  
39 to the fact that the very often the SPV does not own the physical assets, which cannot be used as  
40 guarantees against the loan repayment obligations. For this reason, there is a strong relationship  
41 between the SPV risks and the financial strategy (Dixon et al., 2005). SPV related risks are  
42 described by the Solidity parameter, which refers to the financial strength of the consortium of  
43 partners of the SPV. The Solidity of the SPV is measured by the Size of the Main Partner  
44 (PART\_SIZE) numerical indicator, which is defined as revenues collected in the contract signature  
45 year. Since it is easier to raise funds for a project that has a reliable SPV, the associated level of risk  
46 decreases, and the debt leverage can increase. The other factor taken into account is the number of  
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3 partners of the SPV (NPART). The greater the number of partners, the greater the capacity to inject  
4 equity capital into the project and, in turn, the lower the financial leverage.  
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### 9 10 **Data analysis**

11 Based on the proposed risk model, Table 2 summarizes the independent parameters that are  
12 supposed to have a significant impact on the debt to equity ratio of a PF project. Columns report  
13 the minimum, mean, and maximum value, the low, median and upper quartile and the standard  
14 deviation, respectively.  
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22 **Table 2. Summary of the exploratory analysis on the dataset**  
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### 24 25 *Regression Analysis*

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27 The Normal Probability Plot shows the normality of the dependent variable records (Figure 1), thus  
28 a linear regression model is applicable. The goal of the regression analysis is to test if the  
29 independent variables considered are significant factors to the debt to equity ratio and whether they  
30 have positive or negative impact on such response variable (Tuckey, 1977). A positive influence  
31 indicates that an increase (or decrease) in the independent variable determines an increase (or  
32 decrease) of the dependent variable, while a negative effect produces opposite direction between  
33 independent and response variable variations.  
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### 43 44 **Figure 1. Normal Probability Plot – Debt/Equity**

45 First, the presence of multicollinearity among the independent variables is investigated via the  
46 calculation of the Variance Inflation Factor (VIF). VIF evaluates the relationship between an  
47 independent variable and all other independent ones within the model and it is calculated as  $1/(1-$   
48  $R^2)$ , where  $R^2$  is the coefficient of determination of one predictor on all the others and the it  
49 represents the proportion of variance in the independent variable under study, that is associated with  
50 the other independent variables in the model. Variables with VIF greater than 5 are discarded  
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(Tabanick and Fidell, 2001), since the regression coefficient are poorly estimated (O'Brien, 2007).

A suggestion that directly addresses the problem of reducing multicollinearity is to re-specify the model by eliminating one or more of the independent variables that are highly correlated with the other ones.

### Table 3: Multicollinearity in the complete model

Table 3 shows that multicollinearity exists in our model because GE and RQ have very high VIFs. Therefore, these predictors are discarded as to avoid multicollinearity, as shown in Table 4.

### Table 4. Proof that the model has no multicollinearity among predictors

After the study of the multicollinearity, the regression analysis is completed. Since the variable of the dataset have different order of magnitude, thus the results are difficult to compare, the regression is carried out on standardized variables (Carrol Rovezzi and Carroll,2002). To this end, for each parameter, the mean and the standard deviation are calculated and each observation is then normalized using the Equation 1.

$$z = \frac{x - \mu}{\sigma}$$

Equation 1

where  $x$  is the value to be standardized,  $\mu$  is the mean of the population, and  $\sigma$  is the standard deviation of the population.

Results are reported in Table 5 where columns report the estimate of the regression coefficient, the standard error, the value of t statistic and the p value with the associated level of significance.

### Table 5. Results of the regression analysis

The level of significance is associated to the p-value, which ranges from 0 to 1, is obtained from the observed sample and represents the probability of incorrectly rejecting the null hypothesis. The smaller the p-value, the lower the probability that rejecting the null hypothesis is wrong. If it is less than a predetermined critical value, usually equal to 5%, the null hypothesis is rejected. In the

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3 regression analysis the null hypothesis states that the coefficient equals zero (Montgomery and  
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5 Runger, 1999).

### 6 7 **Discussion of results**

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9 The results show that four out of the eight risk factors taken into account have a significant  
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11 relevance in describing the debt leverage of energy PF initiatives. Therefore, risks in different areas  
12  
13 are important aspects that need to be considered by project stakeholders when assessing a PF  
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15 contract and defining its capital structure.

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18 In particular, the negative impact of the country stability shows that low-risk countries are  
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20 associated with lower levels of debt and increased equity capital injections. This result goes against  
21  
22 the model's hypothesis: this can be probably justified by the fact that high risk countries are  
23  
24 associated with lower spreads on borrowed capital (Girardone and Snaith, 2011). Moreover, a well-  
25  
26 structured regulation framework at the country level can increase the willingness of private  
27  
28 investors to contribute their efforts in public infrastructure development.

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31 Furthermore, the negative relationship with the construction duration suggests that financial  
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33 institutions are more willing to inject debt capital in projects with shorter construction durations. As  
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35 a matter of fact, these projects are likely to be less complex and risky and less subject to delays that  
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37 can jeopardize their profitability. Similarly, shorter concession periods are associated with more  
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39 debt apportions. This result points out that the lending institutions do not consider long concession  
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41 periods as an advantage.

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44 The SPV solidity, expressed here as the annual revenue of the main partner, also proves to be a  
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46 significant risk factor. The positive influence demonstrates that more reliable companies are likely  
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48 to borrow a larger amount of debt capital. This specific aspect is becoming crucial, since lending  
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50 institutions are asking private investors for strong financial reliability and creditworthiness before  
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52 undertaking an investment, and this is creating more and more entry barriers for small contractors,  
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54 with a negative effect on the level of competition (Demirag *et al.*, 2011).

### 55 56 57 **Implications**

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3 The proposed analysis investigates the relationship between risk and the definition of the capital  
4 structure of a PF initiative in the energy sector.  
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7 This work originates both theoretical and practical implications. From a theoretical perspective, this  
8 work extends the literature on the topic, which usually explains the issue under study from a  
9 qualitative perspective mainly highlighting the aspects related to a proper risk allocation between  
10 the public authorities and the private investors involved in the project. In particular, it can be  
11 considered as a basis for a better understanding of the sources of risk that can affect the definition of  
12 the capital structure for a PF initiative. In this sense, previous works have been focused on the  
13 identification of risks and on their classification. This research proposes an empirical method for  
14 measuring the impacts of such risks in the definition of the capital structure and it can be considered  
15 as a foundation for establishing methods able to design refined debt leverages for PF investment.  
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18 From a practical point of view, this work can be used as a predictive method in refining decision  
19 criteria for determining the debt leverage in PF power projects. In fact, in a PF initiative, lending  
20 institutions typically require a large apportion of equity capitals as a tangible commitment by  
21 project promoters, evidence of SPV reliability and reduced risk of debt service. On the other hand,  
22 private promoters try to increase the debt level in order to relieve private risk and obtain an  
23 acceptable rate of return. In this sense, the proposed study can be considered as a support for private  
24 investors to define a more efficient debt leverage. It can also assist in better allocating risks among  
25 involved parties.  
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28 In addition, this study may help international investors to gain insights on the project conditions and  
29 investment environments that may facilitate high debt leverages with positive effects on project  
30 selection processes.  
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33 Still, the model suffers from some limitations. For instance, just several macro-finance factors are  
34 taken into account in the risk profile. However, the aim of the study is to investigate the inherent  
35 financing structure of PF initiatives in the energy arena, separately from the positive or negative  
36 conjuncture of surrounding financial markets. Future research will be oriented to involve more  
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external factors, in order to understand how cyclical external sources of risk might impact on the financial leverage of PF investments.

### Conclusion

An empirical analysis is proposed to explore the factors that can influence the level of debt capital injected into the capital structure of a PF initiative in the electrical power sector. The hypothesis is that the debt leverage is affected by a variety of project risks. Country, Financial, Revenue, Project and SPV risks have been defined together with their parameters and associate numerical indicators. The results show that three out of the five sources of risk have a significant influence on the debt leverage. In particular, the Political Stability, that is associated with the environment wherein the project is developed, the Construction Duration, the Concession Period, that are typical project risks, and the Average Size of Partners, that is related to the private sponsors, prove to be significant variables of the debt to equity ratio for a PF mechanism used to finance a power investment. In other words, a high-risk country, short construction and concession periods, and creditworthy shareholders are likely to determine a maximized debt leverage. The aim is to provide a support in design an efficient debt-to-equity ratio and provide some hints for both private investors and lending institutions to determine the level of debt and equity that should be injected into a PF investment.

This can be used to give opportunities for private sponsors to enhance their profitability and for lending agencies to better handle their risks.

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Risk sources	Parameters	Indicators
Country	Country Attractiveness	Government Effectiveness
	Political Environment	Regulatory Quality Country Stability Index
Financial	Inflation	Inflation Rate
Revenue	Economic Environment	GDP growth rate
Project	Size	Investment size
	Complexity	Construction duration
	Profitability	Concession period
SPV	Solidity	Main Partner Revenues Number of Partners in the SPV

**Table 1. Risks Identification**

	Acronym	Min	Mean	Max	Low quartile	Median quartile	Upper quartile	Standard deviation
<b>Dependent variable</b>								
Debt/Equity [%]	D/E	1	2.897	5.623	2.333	3	3.348	0.879
<b>Independent variables</b>								
Country Stability Index	CSI	-1.600	-0.433	1.210	-1.032	-0.460	0.027	0.645
Regulatory Quality	RQ	-1.310	-0.123	1.770	-0.420	-0.130	0.220	0.556
Government Effectiveness	GE	-1.260	-0.158	2.180	-0.522	-0.125	0.070	0.554
Inflation Rate [%]	INFL	0.040	6.166	20.820	3.777	5.110	8.078	0.409
GDP Growth [%]	GDP	0.700	6.076	0.140	4.200	6.000	7.900	0.026
Investment Size [MLN €]	INV	24.000	7.700	4,200.000	213.000	435.000	904.000	849.000
Construction Duration [years]	CDUR	7.000	35.780	84.000	24.000	33.000	47.250	17.100
Concession Period [years]	CPER	11.000	23.640	49.000	20.000	25.000	25.750	5.319
Average Size of Partners [MLN €]	PART_SIZE	22.000	17,512	103,439	701	5,702	17,274	27,399
Number of Partners in the SPV	PART	1	2.847	7	2	3	4	1.37

**Table 2. Summary of the exploratory analysis on the dataset**

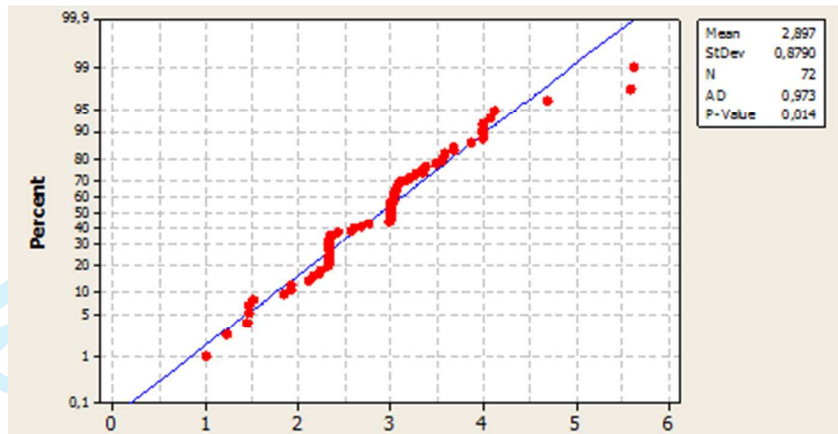


Figure 1. Normal Probability Plot – Debt/Equity

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	GDP											
	CSI	GE	RQ	INF	GROWTH	INV	INV	CDUR	CPER	PART	SIZE	#PARTNERS
VIF	1.396	4.304	4.239	1.187	1.161	1.704	1.441	2.455	1.184	1.22		1.192

**Table 3: Multicollinearity in the complete model**

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	GDP							
	CSI	INF	GROWTH	INV	CDUR	CPER	PART SIZE	#PARTNERS
VIF	1.161	1.163	1.546	1.699	2.418	1.138	1.202	1.08

**Table 4. Proof that the model has no multicollinearity among predictors**

	Estimate	Std. Error	t-value	p-value
Country Stability Index	-0.284	0.098	-2.88	<b>0.005**</b>
Inflation Rate	-0.190	0.098	-1.92	0.059
GDP Growth Rate	0.141	0.113	1.24	0.221
Investment Size	0.229	0.119	1.92	0.06
Construction Duration	-0.417	0.142	-2.93	<b>0.005**</b>
Concession Period	-0.343	0.097	-3.52	<b>0.001**</b>
Average Size of Partners	0.487	0.100	4.85	<b>0.000***</b>
Number of Partners in SPV	0.151	0.095	1.59	0.117
Multiple R-Squared	47.10%			
Adjusted R-Square	40.40%			
Constant	0.367			
<i>Significance notation</i>	0 ***	0.001**	0.01*	

**Table 5. Results of the regression analysis**