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HOW THE SHADOW ECONOMY AFFECTS ENTERPRISES OF FINANCE OF ENERGY

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ABSTRACT

The aim of this paper is to present how shadow economy and corruption can affect the enterprises which operate in the sector of finance of energy. The economic damage is extensive in every national economy where increased levels of shadow economy and corruption exist. Accordingly, this study presents possible measures that can decrease shadow economy and corruption. Enterprises in energy finance can provide reliable, competitive and consistent delivery of customized solutions according to the client's needs. Some of them are finance projects, recapitalizations, single assets or portfolio credits. Many countries have started to target shadow economy and corruption, since they impede the achievement of their fiscal targets, and harm the overall business environment and the country's attractiveness for foreign investments. In the article the operation of the Energy Service Companies (ESCOs) is used as a case study.

Keywords: energy sector, shadow economy, corruption, Energy Service Companies, ESCO.

1. Introduction

Companies that are active in the field of Finance of Energy include the Energy Service Companies (ESCOs), which offer energy services or provide other improvement measures of energy efficiency in the facilities of the user and accept to an extent the financial risk of the procedure. The definition of an ESCO in the international academic and non-academic literature is yet characterized by a lack of consensus. However, many authors largely agree that an ESCO is "a private or a

public company that develops, installs, and provides integrated service-based projects with a typical duration of 5-10 years” (Garbuzova & Madlener 2014). The fee for the services provided depends on the extent of achieved energy saving. Financing is provided through sponsoring for the measures undertaken and charges the beneficiaries with an amount equal to the benefits from energy saving, which is achieved as a result of the improvement measures.

The aim of our research is to analyze the interrelation between the levels of shadow economy and the operation of ESCOs. As it argued by the authors, considering the range and scope of their activities, ESCOs have a tendency to be mainly active in developed countries and they aim to invest in countries where shadow economy is at low levels. Accordingly, it can be supported that a negative correlation between the two variables exists.

The current study is part of the wider European Research Project “THALES” which targets to measure the various aspects of shadow economy particularly in Greece, including corruption, tax avoidance, social contribution avoidance, undeclared or illegal work, shelf consumption, illegal acts (black or underground economy). It will cover all economic agents in Greece, such as citizens and corporations (e.g. public and private individuals, companies and all professional categories, etc.). The research is also performed at sector levels, e.g. to identify the extent of tax evasion and corruption practices in the operations of ESCOs in Greece.

The current paper is structured as follows: in the next section the recent development and services provided by ESCOs are briefly discussed, particularly in countries characterized by high corruption levels; in the third section, selected international indices related to corruption at country and sector levels are presented in order to provide a perspective on the subject under research; in the fourth section, high level measures for the reduction of the shadow economy and corruption are proposed by the authors which can be expanded and applied also in the case of ESCOs; in the last section the conclusions are summarized.

2. ESCOs and the shadow economy

The first ESCOs, were created during the energy crisis in 1970 in the USA and Canada. Later, in the decade of 1980-1990, there was an expansion to Europe and Japan. The European Union with the instruction 2006/32/EC promotes the creation of ESCOs in the countries members. “...the use of financial facilitations by others is an innovative practice that has to be encouraged. With these facilitations, the beneficiary avoids investment expenditures, using part of the financial value of the energy saving that arises from the investments of others for the payment of the investment cost and the rates of others...”

A more advanced form of the ESCOs in the United Kingdom focuses on the innovative methods of sponsoring whilst providing the following services:

- Development and planning for the sponsoring of works of energy efficiency;
- Analysis and control of energy data;
- Planning and implementation of Energy Administration Studies;
- Installation and maintenance of the necessary equipment for the works of energy efficiency;
- Facilities administration;
- Assessment, observation and verification of the energy savings;

These services are included in the cost of the works and repaid through the saving that is achieved.

The advantages for the customers of ESCOs can be summarized as following:

- No fund commitment;
- The risk is undertaken by the vehicle of energy;

- Technological update of the facilities;
- Improvement of the competitiveness of the company;
- Upgrading of the financial image / improvement of the financial ratios;
- Reduction of the operational cost of companies;
- Reinforcement of the company's social responsibility as a marketing tool.

ESCOs may further contribute to:

- Achievement of energy goals of a country;
- Energy consumption efficiencies;
- Reduction of gas greenhouse emissions;
- Increase of employment.

On the other side, according to Schneider (1986), shadow economy includes all economic activities that can create added value and should be included in the National Income (NI). Moreover, according to Tanzi (2002), shadow economy is the part of GDP that cannot be calculated by the official statistic services.

Corruption is defined as the abuse of the public power for personal benefits (e.g. the bribery of civil servants, misappropriation of public money, etc). Bribery, in general, is considered a crime and the national legislation imposes severe penalties for violations. Nevertheless, the particular implementation and law enforcement still remains an unsolved problem, particularly in the field of public procurement, where ESCOs are also involved and interact. In the case of Greek government, for example, there is evidence that the political influence and some other factors, like confidence in the old suppliers played an important role in the evaluation of offers for the works that have been sponsored or co-sponsored.

Many businesses, like ESCOs, fail to operate in an environment where corruption and shadow economy are in high levels and as a result their investments and services are declined. For example, the main problems faced by ESCOs in Russia are the corruption and the lack of funding (Kozhevnikov, 2014). Also, judicial corruption is still a problem despite substantial improvement in efficiency and fairness in the courts in Georgia. Both foreigners and Georgians continue to doubt the judicial system ability to protect private property and contracts also in the sector of ESCOs (Abramia et al. 2009). Political and organizational obstacles primarily exist in developing countries and consist of issues such as insufficient government involvement in energy efficiency and corruption in the companies which operate in this sector (Aminu et al. 2013).

ESCOs market in Greece is considered to be still in a very primary stage and has not been deployed yet either in the public, or in the private sector, although there is a large energy saving potential mainly in the tertiary sector. In now days, only few attempts have been implemented by ESCOs, mainly on Renewable Energy Sources projects especially for PV installations or/and street lighting. Nevertheless, these applications cannot be considered as typical Energy Performance Contract (EPC) examples, but more as guarantee contracts or leasing of equipment.

However, recently under a program deployed by the Center for Renewable Energy Sources many companies exhibited interest to act as ESCOs and provide EPCs leading to a preliminary interest for the potential implementation of such projects both at public and private sector.

As main barriers for the development of ESCOs' market in Greece can be identified the lack of knowledge regarding ESCOs and EPCs as mechanisms for the implementation of energy saving measures in public and private sector, the absence of standard type of EPCs and the necessary monitoring methodology, the existence of corrupted practices, the vague procedure for the applications of EPC in public sector and the lack of confidence for the guarantee of the compliance with the contract's terms and the repayment process among ESCOs and interested parts. Finally, it must be pinpointed the reluctance of financial sector to support ESCOs'

actions and measures through EPCs, which hampers the deployment of ESCOs' market (ICLEI, 2014).

3. International indices for shadow economy and corruption

Since the mid-1990s, Transparency International has generated a wide range of yearly corruption rankings of countries. The Index Global Corruption Barometer (GCB) is calculated from the relevant survey of the public opinion of Transparency International. About 1,000 people from each country, out of a total of 107 countries, were questioned for GCB 2013. The survey for 2013 indicated that political parties are thought to be the most corrupted institution.

Furthermore, the Bribe Payers Index (BPI) which was first launched in 1999, assesses the "supply side" of corruption – "the likelihood of firms from the world's industrialised countries to bribe abroad." In BPI 2011, the 28 leading economies were ranked according to the perception of thousands of senior business executives from developed and developing countries in the question whether there is bribery abroad.

Respectively, according to the evaluation of BPI 2011, companies from Russia and China were considered as the most prone to pay bribes abroad, mainly due to their increased significance in international trade and foreign investments, while companies from Switzerland and Holland were unlikely to do so (ranked in the first places in Table 1 below).

Table 1. Classification of countries based on BPI in 2011 (Adopted from BPI, <http://bpi.transparency.org/bpi2011/results/>)

RANK	COUNTRY/ TERRITORY	SCORE	NUMBER OF OBSERVATIONS	STANDARD DEVIATION	90% CONFIDENCE INTERVAL	
					LOWER BOUND	UPPER BOUND
1	Netherlands	8.8	273	2.0	8.6	9.0
2	Switzerland	8.8	244	2.2	8.5	9.0
3	Belgium	8.7	221	2.0	8.5	9.0
4	Germany	8.6	576	2.2	8.5	8.8
5	Japan	8.6	319	2.4	8.4	8.9
6	Australia	8.5	168	2.2	8.2	8.8
7	Canada	8.5	209	2.3	8.2	8.8
8	Singapore	8.3	256	2.3	8.1	8.6
9	UK	8.3	414	2.5	8.1	8.5
10	US	8.1	651	2.7	7.9	8.3
11	France	8.0	435	2.6	7.8	8.2
12	Spain	8.0	326	2.6	7.7	8.2
13	South Korea	7.9	152	2.8	7.5	8.2
14	Brazil	7.7	163	3.0	7.3	8.1
15	Hong Kong	7.6	208	2.9	7.3	7.9
16	Italy	7.6	397	2.8	7.4	7.8
17	Malaysia	7.6	148	2.9	7.2	8.0
18	South Africa	7.6	191	2.8	7.2	7.9
19	Taiwan	7.5	193	3.0	7.2	7.9
20	India	7.5	168	3.0	7.1	7.9
21	Turkey	7.5	139	2.7	7.2	7.9
22	Saudi Arabia	7.4	138	3.0	7.0	7.8
23	Argentina	7.3	115	3.0	6.8	7.7
24	UAE	7.3	156	2.9	6.9	7.7
25	Indonesia	7.1	153	3.4	6.9	7.7
26	Mexico	7.0	121	3.2	6.6	7.5

27	China	6.5	608	3.5	6.3	6.7
28	Russia	6.1	172	3.6	5.7	6.6
	Average	7.8				

Agriculture and light manufacturing are considered to be the least bribery-prone sectors (Table 2). The public works contracts and construction sector ranks last. Other sectors ranked in the bottom quartile of the table include utilities; real estate, property, legal and business services; mining; and oil and gas; (where ESCOs are active). The main attribute of these sectors is the high-value of investment and considerable government involvement and regulation, both of which offer opportunities and motivations for corruption.

Finally, Global Corruption Report (GVR) is one of the most characteristic and important publications of the International Transparency, conveying the experience against corruption. The most recent studies focused on specialised thematic domains such as, corruption in the climatic change and the private sector (among the companies examined were included also ESCOs) (Lawrence and Haas 2008; Komendantova and Patt 2011).

Table 2. Classification of sectors based on BPI in 2011 (Adopted from BPI, <http://bpi.transparency.org/bpi2011/results/>)

RANK	COUNTRY/ TERRITORY	SCORE	NUMBER OF OBSERVATIONS	STANDARD DEVIATION	90% CONFIDENCE INTERVAL	
					LOWER BOUND	UPPER BOUND
1	Agriculture	7.1	270	2.6	6.8	7.4
2	Light manufacturing	7.1	652	2.4	7.0	7.3
3	Civilian aerospace	7.0	89	2.7	6.6	7.5
4	Information tech.	7.0	677	2.5	6.8	7.1
5	Banking & finance	6.9	1409	2.7	6.8	7.0
6	Forestry	6.9	91	2.4	6.5	7.3
7	Consumer services	6.8	860	2.5	6.7	6.9
8	Telecoms	6.7	529	2.6	6.5	6.9
9	Transportation & storage	6.7	717	2.6	6.5	6.9
10	Arms, defense & military	6.6	102	2.9	6.1	7.1
11	Fisheries	6.6	82	3.0	6.0	7.1
12	Heavy manufacture	6.5	647	2.6	6.4	6.7
13	Pharmaceutical & healthcare	6.4	391	2.7	6.2	6.6
14	Power generation & transmission	6.4	303	2.8	6.1	6.6
15	Mining	6.3	154	2.7	5.9	6.6
16	Oil & gas	6.2	328	2.8	6.0	6.5
17	Real estate, property, legal & business services	6.1	674	2.8	5.9	6.3
18	Utilities	6.1	400	2.9	5.9	6.3
19	Public works contracts and construction	5.3	576	2.7	5.1	5.5
	Average	6.6				

4. Proposals against shadow economy

According to Schneider (2013) we pose the question if shadow economy is a “blessing in disguise”. The enlargement of shadow economy leads to a higher added value whilst its narrowing may increase social welfare provided it is thoroughly included in the economy. This means that proper financial and tax measures should be undertaken to motivate the transfer of the produced goods and services from the shadow to the official economy.

Schneider (2013) points out that a government that aims at the reduction of activities of shadow economy should first analyse the complex relationship between the official and shadow economy, as well as the consequences of its political decisions. Additionally, he referred to the aim of a significant decrease of corruption in countries like Greece, proposing direct and powerful measures, like the prohibition of public contract work for 3-5 years for the businesses that are involved in bribery and / or corruption.

Katsios (2006) points out that the rationalisation of administrative costs in combination with the simplification of the legislation frame may bring about a significant decrease in shadow economy. Also, he proposes the geographical relocation of civil servants with the aim to avoid developing their customer relationships with the citizens of the regions.

Some of the measures for the reduction of the shadow economy and corruption which are suggested by the authors of this working paper and can also be applied in the case of ESCOs, include the following:

- Penalization of the purchaser of undeclared work and in general very severe measures for confirmed violations.
- Stricter penalties for confirmed violations, so as to set an example to avoid repetition of similar cases in the future.
- Decrease of the taxes that involve significant cost of confirmation and low revenues, and reinforcement of taxes with significant revenues, without having an important cost of income.
- Separation of the tax-control from the income tax authorities and supervision of both by an independent authority.
- Increased motives for those who indicate tax compliance, as a reward for their tax morality (i.e. exemption).
- Promoting a fair tax system in proportion with the revenues of tax payers so as to boost the feeling about what is right, as far as taxation is concerned, a fact that increases tax morality.
- Immediate reciprocity of taxes from the state (i.e. investments on security, health, education), to enhance tax morality of tax payers. In most European countries, this is the focus point of tax morality (i.e. Germany and Austria), as tax payers can realize that their money is not wasted but invested.
- Banning and discouragement of every form of direct or indirect advertisement, that presents the mentality of tax evasion as an ability or increased intelligence.

5. Conclusions

In this working paper the aim was to present the repercussions of shadow economy and business corruption in the field of finance of energy. Many forms of enterprises, like ESCOs, cannot operate in an environment where corruption and shadow economy are in high levels. Also, large-size companies, in the field of ESCO, originated from countries characterized by low corruption (like Switzerland) prefer to select countries with low levels of shadow economy and corruption for investments.

International organisations publish indices that evaluate the levels of shadow economy and corruption, as the Bribe Payers Index, and advice governments on methods to reduce the shadow economy and corruption. The creation of a healthy

investment and business environment is currently a top priority for many countries, even for those who present low levels of shadow economy and corruption. Finally, high-level measures were presented that can restrain shadow economy and foster a more efficient business environment.

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