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Privatization of the electricity sector-building on international experience to promote an alternative strategy for Cyprus

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**PRIVATIZATION OF THE ELECTRICITY SECTOR –
BUILDING ON INTERNATIONAL EXPERIENCE TO
PROMOTE AN ALTERNATIVE STRATEGY FOR
CYPRUS**

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**PRIVATIZATION OF THE ELECTRICITY SECTOR –
BUILDING ON INTERNATIONAL EXPERIENCE TO PROMOTE
AN ALTERNATIVE STRATEGY FOR CYPRUS**

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**PRIVATIZATION OF THE ELECTRICITY SECTOR –
BUILDING ON INTERNATIONAL EXPERIENCE TO PROMOTE
AN ALTERNATIVE STRATEGY FOR CYPRUS**

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ABSTRACT

The issue of ‘privatization’ is fairly new to Cyprus; it was initiated by the memorandum of understanding (MOU) signed between the Republic of Cyprus and Troika (Eurogroup) on April 9th, 2013. Privatization of electricity was mentioned in one of the clauses of the MOU.

The main objective of this work is to look into privatization and the literature about the advantages and disadvantages, the history, the methods used and the lessons learned from other countries. Moreover, a survey was conducted to examine the views of the main stakeholders of the electricity sector (employees and consumers). This research covered their views on the current situation, what are their perspectives regarding privatization and how they would respond in the case that an alternative approach is adopted. Finally, the results were analyzed as part of this work.

The contribution of this work to the literature on privatization includes a suggestion on how to adopt, an alternative to the privatization process, based on the problems caused and lessons learned from other countries. This specific alternative approach which must be seriously considered by the state is based on the theory that since the causes for privatizing electricity are supposed to be related to the difficulties that the state faces in order to compete the private sector, the solution is to make necessary changes to the state, legislation and framework instead of selling public utilities.

Findings of the survey suggest that the alternative option can be acceptable by the rest of the main stakeholders of the electricity sector (employees and consumers).

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LIST OF ABBREVIATIONS

ACCA	-	Association of Certified and Chartered Accountant
AEMC	-	Australian Energy Market Commission
BOT	-	Build-Operate-Transfer
CEGB	-	Central Electricity Generating Board
CEO	-	Chief Executive Officer
CF	-	Cash Flow
CIA	-	Certified Internal Auditor
CPA	-	Cyprus Ports Authority / Certified Public Accountant
CyTA	-	Cyprus Telecommunications Authority
DCF	-	Discounted Cash Flow
DSO	-	Distribution System Operator
E.ON	-	Energy On-Line
EAC	-	Electricity Authority of Cyprus
ECJ	-	European Court of Justice
EDF	-	Electricité de France
EDP	-	Energías de Portugal
ENBW	-	Energie Baden-Württemberg
EU	-	European Union
GIS	-	Geographic Information System
GWh	-	GigaWatt hours
GDP	-	Gross Domestic Product
IEA	-	International Energy Agency
ILO	-	International Labor Office
IMF	-	International Monetary Fund
IPO	-	Initial Public Offering
ITSO	-	Independent Transmission System Operator
LSE	-	London Stock Exchange
MOU	-	Memorandum of Understanding
NBU	-	Network Business Unit
OECD	-	Organization of Economic Cooperation and Development
PPC	-	Public Power Corporation
PV	-	Present Value
R&D	-	Research and Development
REN	-	Redes Energéticas Naciones
RES	-	Renewable Energy Sources
ROC	-	Republic Of Cyprus
SGO	-	Semi Government Organizations
SOE	-	State Owned Enterprises
TSO	-	Transmission System Operator
WACC	-	Weighted Average Cost of Capital
WB	-	World Bank

CHAPTER ONE: INTRODUCTION AND METHODOLOGY OF RESEARCH

Introduction

The Republic of Cyprus ('ROC') became an independent state in 1960, after a long period of being a British colony. At the time of independence, the economy of Cyprus was in relatively good shape thanks to British outlays in terms of building up Cyprus's civilian infrastructure. The following years, Cyprus's economy showed remarkable progress moving from one based primarily on the import-substitution manufacturing to a more export-and service-oriented one focused primarily on tourism and later on the banking sector. This growth was interrupted in July 1974 when Turkey invaded the island, holding, against every international law, since then approximately 37% of the island and one third of the population displaced. The economic consequences were catastrophic, but the Republic of Cyprus has since managed to restructure its economy achieving a so-called economic miracle.

Cyprus became a full member of the EU in 2004 with gross domestic product (GDP) reaching \$23,735 per capita. The per capita GDP was continuously rising, reaching \$29,400 during 2008 when the country officially joined Eurozone. The economy of Cyprus was transitioned from an exporter of minerals and agricultural products up to 1974 to an exporter of light production of goods through the early part of the 1980s and to a centre of international tourism, banking, shipping, and business services ever since. The manufacturing sector accounted for about 17.1 percent of GDP in 2011 while the primary sector (agriculture and fishing) continued to shrink, reaching 2.4 percent of GDP in 2011. At that time, Cyprus' per capita GDP was approximately 92% of the average EU27 and the standards of living were still growing.

The economic crisis that Europe, and more specifically Eurozone was facing, touched the economy of Cyprus during 2011, mainly because of its exposure to Greek debt and the lateness in taking corrective measures in payroll and procedures of the public sector. In June 2012, Cyprus government requested an economic bailout program from Eurogroup (European Central Bank, European Commission and International Monetary Fund) also well known as Troika.

The negotiations were not finalized, though, until March 2013 when a Memorandum of Understanding ("MOU") was signed on Specific Economic Policy Conditionality. This MOU was a result of the Eurogroup financial assistance to Cyprus of 17 billion euros which was the estimated need of the state and the banks. The MOU followed the painful and the unprecedented measure of 'haircut' of the deposits in the two largest banks in the country (Bank of Cyprus and Cyprus Popular Bank).

In Clause3- Key Objectives of the MOU, there is a statement that asks ROC to: *"elaborate a programme for improving the efficiency of state-owned enterprises and semi-governmental organisations and initiate a privatization programme"*. In clause

3.6, specific reference was made to the sectors targeted for privatization, providing that:

“The Cypriot authorities will initiate a privatization plan to help improving economic efficiency through enhanced competition and encouragement of capital inflows, and to support in restoring debt sustainability. This plan should consider the privatization prospects of state-owned enterprises (SOEs) and semi-governmental organisations (SGOs), including, inter alia, CyTA (telecom), EAC (electricity), CPA (ports), as well as real estate/land assets.”

The purpose was to raise at least EUR 1 billion by the end of the programme period and an additional EUR 400 million by 2018 at the latest.

Purpose of the Study

The purpose of this study is to identify and examine all parameters and policy issues regarding the Privatization of electricity in Cyprus, examine and focus on lessons learned from this process in other countries. It will also review the impact on the community and research on the views of the staff but also of the consumers on the outcome of the privatization. After performing research on all known methods of privatization, the study will focus on possible alternative approaches that will not necessarily assume the transfer of public interest companies to the private sector and examine whether this is feasible and viable.

Significance of the Study

Privatization, especially of vital government and semi-government organizations (“SGOs”), may be a new concept for Cyprus; nevertheless, it has been implemented in many countries, not only for members of the European Union (“EU”). Therefore, it would be for the benefit of the country to look into examples of privatizations in other countries and evaluate the result of privatization processes both from an economic but also from a social point of view. Further to the research work, an assessment of the views and positions of various stakeholders on related matters was carried out. It would be beneficial to identify the requirements and effects of changes in the governance of the SGOs and management and leadership style. The conclusions of this study will be for the benefit of the people to understand a term that is somewhat new to them and for the government in order to avoid actions that will not serve the community.

The Methodology

In an attempt to obtain the necessary information for this study, thorough research on literature was needed. That included books, publications, journals and documents that covered and analysed several aspects on the topic. In order to verify the facts and stakeholder’s views, a questionnaire was developed and published asking random and focused answers. Among the large numbers of literature published on the subject, the most recent and reliable ones were given more credit.

In addition to the above, interviews with key people were performed so as to get a clearer idea on the steps followed, or steps to be followed in the privatization process and the expected outcomes.

Internet was a very useful tool in the research and was greatly used in order to obtain access to information. In this regard as a primary tool, search engines such as Google were used, and when the particular literature was reached, the usage of the university library services were utilized as necessary. Also, subscriptions to online library services were obtained (Questia).

The questionnaire was carefully organized to include all related information and the conclusions and recommendations are thereafter drawn and discussed. A subscription to an online questionnaire service was required (Survey Monkey).

All the above are mentioned and acknowledged in the Reference section of the study. Assistance for referencing was provided by a website (Autocite).

The Chapters

The chapters in which this work is divided are thereafter listed, and briefly outlined.

Chapter 1: A brief historical overview of the country and its economy that led to the introduction of the term in the country. It includes and explains the purpose, motivation and significance of the study; the definition of the terms used and outlines the methodology that was used to put through the work.

Chapter 2: A review of the relevant literature used is included together with the authors' experiences. An effort to indicate the conflicting outcomes that various authors concluded regarding this issue is attempted.

Chapter 3: The reasons behind privatization are mentioned along with the ones who argue that privatization should be avoided. The different techniques are described in detail together with their advantages and disadvantages. Finally, it explains how this matter was presented in Cyprus and what the way forward should be.

Chapter 4: Cover of the electric sector which is the one under study in this work. After a review of the current situation in the electricity industry in Cyprus, examples of what happened in other countries where privatization was introduced are given along with the lessons learned from these processes.

Chapter 5: The important question of whether there is an alternative to privatization is outlined. Also, the question on whether the current situation may be changed for the benefit of the organization, the community and the country without privatizing electricity is brought forward. Research is performed on other international examples of such a strategy.

Chapter 6: A statistical analysis is included. It deals with the opinions of the stakeholders (employees and consumers) on many aspects of the issue. The questionnaires, the methodology and the procedure for preparing, publishing and collecting, hypothesis used and results are presented. Finally, there is a discussion on

the findings of the study compared with polls and researches in other countries. Also, the findings are compared with researches in Cyprus during the previous years.

Chapter 7: In the final chapter of this work the conclusions and recommendations of the study are listed and discussed. As well as that, there is an initiation for further future research on the aspect together with an outline on the limitations of the study.

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CHAPTER TWO: LITERATURE REVIEW

Definitions

Privatization, as per Webster's Dictionary, is "*the process of changing from public to private control or ownership*". This general definition may not, of course, describe what is included in the term. Many authors gave alternative and complementary definitions of privatization. For instance, Martin (1993) said that the privatization is "*a change in the role, responsibilities, priorities and authority of the state,*" initiating the content rather than just the ownership transfer. A similar definition was given by professor Sava (1987) who said that privatization is "*the act that decreases the role of government, or increases the role of the private sector, in an activity or ownership of property*". Another, more economic, dimension was given by Kent (1987) who indicated that "*privatization refers to the transfer of functions previously performed exclusively by government at zero or below full-cost prices to the private sector at prices that clear the market and reflect the full costs of production*".

Literature on Privatization

Since the 1980s, many theories have been used in regard to the privatization issue. Even though the literature includes lot of these theories, this review will study, and try to further analyse, three aspects of the issue. These are: whether privatization should be used as a means of modern state governance, whether it has a positive or negative impact on various stakeholders and whether there is an alternative way forward.

During the last three decades, there was a boost of privatizations, because of the conditions that World Bank (WB) and International Monetary Fund (IMF) put in place in order to assist countries with financial problems (Perotti, 2004).

A number of new definitions were given to the term "Privatization" such as the one given by ILO (2001) who defined it as the transfer of assets in terms of ownership, management, finance or control, from the public to the private sector. According to the "Law on Privatization", prepared by the Legal Reform and Private Sector Development Unit, Legal Department of WB (The World Bank, 2013):

"privatization means a transaction or transactions utilizing one or more of the methods referred to in Article 18 hereof and resulting in either a sale to private parties of a[n] [controlling] interest in the share capital of the State owned enterprise or of a substantial part of its assets, or the transfer to private parties of operational control of the State owned enterprise or a substantial part of its assets".

The reason that many countries were either keen or forced to privatization was the loss of money because of their role in the economy by having a controlling stake in business entities that would have otherwise been profitable. An argument was also raised, that through privatization there would be an improvement of the corporate performance (Frydman et al, 1999). This, however, is still something to debate and disagreement between theorists.

The truth is that there are both positive and negative consequences throughout this privatization process. According to Nancy and Nellis (2003), privatization was not fair, not only in concept, but also in the implementation. They concluded that the whole process harms not only the poor but the middle class as well, negatively affects workers and therefore, employment and increases the prices of the welfare goods and services (water, electricity, transportation and telecommunication). There were findings; however, such as Cato (2008) expressing that, in countries and industries in which there is a sufficient competition, welfare is improved.

So, if there are both advantages and disadvantages in privatization, why do governments still look into this process and follow it even in cases when they are not required to do so? One of the most important factors considered is that States gain short term financially to repay debts. In the midst of the European debt crisis, it is tempting to think that high-debt countries could alleviate the recessionary impact of the budget-consolidation process by selling (poorly managed) assets and stakes in their state-owned enterprises (SOEs), and by using the proceeds to buy back their debts (Hope 2011). It is also considered that, through privatization, there is an improved and extensive usage of innovative approaches and technology. Nalingigwa, (n.d.) reported that goods and services under a privatized organization are often more competitive and more innovative. This is a result of greater efficiency and effectiveness. Supporters of privatization argue that, under competitive markets, the private sector can provide the same services more efficiently than the public sector, both in terms of technical and allocative efficiency (Megginson and Netter, 2001; Shleifer, 1998). This was also supported by Pamacheche and Koma (2007) who had the opinion that privatization brings a number of benefits including efficiency gains, reduced government subsidies and, therefore, state can direct to alternative development initiatives. However, these statements were proven false by Katz (2001) who concluded that: *“The privatization of public enterprises causes a reduction in and at times even the shutdown of local R&D and engineering centres. The new operators affiliated by the developed world are rapidly modernising the national infrastructure in those areas but on the basis of imported equipment and foreign engineering know-how.”* Also, Munari, Roberts and Sobrero (2002) concluded that: *“Along with the already existent differences among the studied cases, they find similarities: a reduction in R&D spending, a shift towards more commercially-oriented projects and a change in external collaboration”*.

There have been studies dealing with the variance in the performance of the privatized company. Pamache and Koma (2007), referring at a World Bank research, they concluded that in almost all cases (8 out of 9) there was an improvement of the performance in the company. Pamache and Koma also referred to a study (Megginson et al. 1994) where 45 out of 60 sample companies, showed substantial performance improvement. Several authors also stated that improvements in performance in state firms which were privatized were not a result of the ownership transfer but due to the competitive environment where there are incentives for efficiency (Vickers and Yarrow, 1991).

Nevertheless, as the objectives of privatization were largely political rather than economic, effective competition was sacrificed to obtain the political support for privatization (Kay and Thompson, 1986, p. 31). There are political parties and movements that do not believe in government having a controlling stake or being

highly involved in businesses that may be performed by the private sector. In addition to that, state monopolies should be eliminated for the benefit of the economy and the people. These statements are argued, though, with examples that where state monopolies were terminated, they were subsidized by private monopolies or oligopolies and that negatively affected society and people.

In addition to the effects that privatization has to the community, there are also effects on the employees and employment in general. Prizzia (2005) examined the process in two countries and privatization of two different types of utilities. In addition to the decrease in community welfare, both in the case of water authorities in Bolivia and electricity in Thailand, an increase in the unemployment was also observed. Employees, who work for organizations that are destined to be privatized, feel insecurity and fear of losing their working positions according to Aghaei et al. (2010). Khan (2003) concluded that the privatization has a significant negative effect on existing workers' employment and also in total employment of the country. This comes as no surprise and Earle (2006) took a firm stand that during the process of privatization, it is common to confront great opposition from existing employees. Pamache and Koma (2007) argued against this negative effect, suggesting that, in the long run, employees' interests are fulfilled when an organization is privatized. These can be achieved by being beneficial to employees not only in terms of an upgrade in employment levels and remuneration improvements but also by seeing share prices rise thus earning a return on the shares that they obtained at discounted prices.

Privatization supporters argue that managers in public firms do not have to worry about consequences of their decisions and since the organizations rely on government funding, they budget constraints are soft (Shleifer, 1998) something that leads to worse performance. Also there is lack of incentive since the management does not face the threat of a takeover (Boycko et al., 1996; Vining and Boardman, 1992).

Privatization also has effects on employees' performance and health. The findings are also interesting since there are researchers like McCarthy et al. (n.d.) who concluded that the majority of employees reported that their conditions of employment got worse after privatization, whilst others such as Aghaei et al. (2010) whose conclusions justified these actions because organizational change is significantly associated with an increase in psychological stress, which results in a reduction in performance.

In public security sectors it had been proven that developing a new regulatory mainframe is much more important than privatization itself. This regulatory structure will provide more certainty for private investors and also it is vital for the reform process in the electric sector (Kessides, 2004).

Independent regulation provides protection to consumers from monopoly (or oligopoly) abuse. This kind of protection is desirable in the areas of electricity supply not only in the case where supply is dominated by a state-owned entity but it is much more important in the event of a privatized monopoly. Bortolotti, Fantini, and Siniscalco (1999) conclude that effective regulation is a crucial institutional variable in electricity privatization. Finally, because of the complexity of the reform in the electricity sector the initiation and presence of regulatory mainframe will ease the

implementation and procedures (Hodge, Hayward, Scott,&Sands, 2004; Hunt& Shuttleworth, 1996; Steiner, 2000).

An important aspect of the reform in electricity sector is unbundling. This procedure indicates a separation of the electric industry in separate generation, transmission and distribution entities. The risks involved by unbundling include reduction in economies of scope and scale, and increase in transaction cost because of the legal contracts that replace direct management control of supply (Joskow, 2002)

Steiner (2000) used data from electricity industries in 19 OECD countries¹ from 1987 to 1996 to test for the effects of privatization, competition and regulation. He provided mixed results but there were some evidence of higher capacity utilization with private ownership and industry unbundling.

Also, Zhang et al. (2002) assessed the effects of competition, privatization and regulation on performance in electricity generation in 51 developing countries between 1985 and 2000. He found out that the introduction of competition is most likely to bring about performance gains rather than ownership change.

Moreover, researchers and authors concluded that electricity privatization is never problem-free. An example involves the fact that electricity production is associated with various environmental concerns and power producers may be reliant on fuel inputs subject to fluctuating prices (Hodge et al., 2004; Newbery, 1999).

Therefore, conflicting reports and conclusions are observed among researchers that looked into the privatization issue. It is, therefore, a necessity to investigate alternatives to privatization that may minimize negative and maximize positive effects.

¹ 364 Y. Zhang et al. / *The Quarterly Review of Economics and Finance* 45 (2005) 358–379

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CHAPTER THREE: PRIVATIZATION METHODS AND PREVIOUS NATIONAL EXPERIENCE

Arguments in Favour and Against Privatization

Studying the literature and in an attempt to sum up the reasons why the state should proceed with privatizations, some of the arguments in favour of the process indicate that:

- State will save money in management and delivery of public services.
- Certain programs are implemented faster.
- High quality services are provided.
- Necessary when government does not have the expertise or staff to carry out particular programs.
- Usage of innovative approaches and technology.
- Breaks unnecessary state monopolies.
- More flexible and efficient services.
- Competition in productivity between state and private employees operate outside bureaucratic constraints.
- State generates maximum revenue and reduces investment.
- Promote private sector involvement in the economy.
- Risk sharing between public and private sector.

However, there are reasons raised against privatization and the ones against the process indicate that privatization:

- May result in private instead of public monopolies which is sometimes worse.
- May lead to corruption.
- Gives away public ownership to private sector and to a few private investors.
- Limits accountability of government.
- Private and public targets and good are not always in line.
- May lead to lower quality of services since private sector usually has profit as a leading motive.
- Lowers state employee morale.
- Destabilizes economically marginal communities.
- Increase unemployment.
- May lead to increased prices and fees.
- Minimizes state earnings and profits.
- National security is endangered.

Privatization Methods

The consequences and the results of the privatization, as well as how hard and problematic the process can be, depend on the method used and the procedure that is followed. During the conference ‘Cyprus Privatization Conference’ held in Nicosia in July 2013, Mr Constantinos Herodotou, Lead Advisor at Ernst & Young London², analysed the several privatization methods.

1. Short term Leasing or Management of the Utility

By the usage of this model, the State assigns / outsources specific operational and administrative services. It, however, retains full ownership, the responsibility of income collection, and it remains responsible for the financing of the SOE. Private sector is applying fees, on the basis of the services it provides and its earning depends on the performance of the SOE. A typical contract has duration of 1-5 years although it may reach 15 years in some cases.

Advantages

- Transfer of operational and management risks, to private sector.
- Introduces technical abilities of private sector within short time.
- The model is relatively easily acceptable.
- Pricing control remains under state.
- May incorporate contractual performance motives.

Disadvantages

- No earnings or funds for the state.
- State is still responsible for the rest of business risks and financing.
- Difficulties in setting of performance targets.

2. Public-Private Partnership

If this model is implemented, the state conducts a project in cooperation with private vendors, relying on private resources instead of tax revenue. It ends as a hybrid organization with risk sharing and co-production between state and private agents.

Advantages

- The risk is spread.
- State still retains ownership.
- Easily gained off-balance-sheet financing.
- Increased innovation in the design, construction and operation of infrastructure-based projects.

² Constantinos Herodotou was recently (2014) appointed as Head of Privatizations by Government of Cyprus

Disadvantages

- Relatively high level of risk due to uncertainties over costs and revenue.
- No balanced allocation of risks between public and private sector.
- Public sector becomes a sufferer in delays.

3. Availability or Shadow Payments

This model is suitable for SOEs with weak earnings base or where state is not keen to use market prices/fees. In the case of availability payments, state pays the private company, a predefined amount, in periodical instalments, as long as pre-agreed operational criteria are fulfilled. However, in the case of shadow payments, state pays a specific amount according to the volume of customers that use the asset or the services offered.

Advantages

- Transfer of capital expenditure risk, maintenance and operational risk to the private sector.
- Private sector takes over and repays the debt of the SOE.
- The model is acceptable by users that do not pay directly for the service but through taxes.

Disadvantages

- Continuous payments from state to private sector.
- Requires continuous monitoring of quality and service standards.
- Not suitable for export of redundant value.
- Limited earnings for state since day-one.

4. Long-term Concession or Lease

The responsibility for operation, maintenance, investments and funding for the duration of the lease is transferred to the private sector. Ownership title remains to state, and any possible additional assets return to the state after lease expires. State monitors the responsibility of price/fees determination through agreement. In addition to that, the state may retain the right of receiving earnings. The lease duration may be 25-30 years or up to 50+ years.

Advantages

- Significant initial earnings for state.
- Private sector takes over and pays debt without referring to state.
- Risks transferred to private sector.
- Further development of efficiency.
- Private contractor is eligible to economic penalties or loss of control in case of inability to fulfil its obligations.

Disadvantages

- Usually a complex contract even though there were a number of examples in the past.
- Transaction cost is high.
- Long procedure most of the times.
- Suitable mainly for SOEs that are standalone and create earnings.

5. Stock Exchange Entry (IPO)

Part of the SOE is offered to the public through initial public offer in Stock Exchange. The ownership of private sector is transferred to a wider investor base, and the listed company is responsible for capital expenditure; maintenance; operation and funding. Finally, management is accountable to diffused share base.

Advantages

- State can exercise influence through control mechanisms and governance.
- State can retain majority sharing and control.
- State transfers capital contribution risks, maintenance, operational and finance risks.

Disadvantages

- Relatively low valuations and lower earnings for state.
- May need regulatory framework.
- Requires a creation of a business entity procedure before the transaction.
- Risks that state retains are according to its ownership percentage
- Ownership does not return to state.

6. Sale as a Whole

This method implies that ownership never returns to state. The obligations, responsibilities and remuneration are shown in the contract with which the state sells part or the whole of its shares to financial or strategic investor(s) or dedicated funds. The state may continue to charge regulating fees for public policy purposes. Types of risks that are transferred to private sector are set in the contract and according to the level of share percentage that are sold to private sector.

Advantages

- Premium valuation may be achieved.
- Significant initial earnings for state.
- Debts/Loans may be obtained without referring to the state.
- Earning, Operational, Maintenance and funding risks are transferred to private sector.
- State may retain control (when part of the own funds are sold).

- State may have involvement in board of directors.

Disadvantages

- May need regulatory framework.
- Assets are not transferred back to state.
- Requires a business establishment procedure before the transaction.

7. Not for Dividend Company

This model is suitable for large organizations or infrastructure and where government subsidies are often required. The complete ownership and operation are transferred to an entity where no dividends or earnings are distributed. Any surplus are reserved either for reinvestment for improvement in the services offered or for minimizing fees. State or regulator retains the financial framework.

Advantages

- Easily accepted by interested parties.
- Makes long-term financing easier.
- Makes return on assets possible, something that will lead to long-term state subsidies.

Disadvantages

- Rather unsuitable for Cyprus' SOEs because of the requirement for government subsidies which is not easily accepted by EU.
- Requires more supportive legislation compared with other models.
- Initial income is minimal or zero for the state.
- Ownership is never transferred back to the state.
- There is no proof for the management motives.

Valuation Approaches and Methods

One of the main aspects in Privatization is the valuation of the entity. This is important for the stakeholders and especially the shareholders (state) in an effort that the state gets the maximum from this effort, in financial terms. Among the different valuation methods the main ones are the following:

1. Discounted Abnormal Earnings

This valuation method implies that the expected book value of the equity at the end of year 1, is the book value at the beginning of the year plus expected net

profit, less expected dividends³. The formula used to calculate the equity value using this method is:

$$\text{Equity Value}_0 = \text{BV}_0 + \sum_{t=1}^{\infty} [\text{AE}_t / (1+r)^t]$$

Where:

BV_t = Book value of equity at beginning of year t

r = Cost of equity capital

AE_t = Expected value of abnormal earnings in year t

= Projected earnings in yr t - (r * BV of equity at beginning of year t)

2. Income Approach – Discounted Cash Flows

The Discounted Cash Flow (DCF)⁴ method or Net Present Value method is considered as the one of the most appropriate method for company valuation. The DCF method is based on the theory that the value of the investment is the net present value of all the future cash flows derived from it. It is also based on the theory that dividends can be recast as free cash flows. This is the most widely used method, as long as there reasonable assumptions with regard (a) the future cash flows, (b) the residual (terminal) of the investment, and (c) the discount rate, Working Average Cost of Capital (WACC). In mathematical terms valuation under this method may be expressed as follows:

$$\text{PV} = \text{CF}_1 / (1+k) + \text{CF}_2 / (1+k)^2 + \dots [\text{TCF} / (\text{k} - \text{g})] / (1+k)^{n-1}$$

Where:

PV = present value

CF_i = cash flow in year i

k = discount rate

TCF = the terminal year cash flow

g = growth rate assumption in perpetuity beyond terminal year

n = the number of periods in the valuation model including the terminal year

There are three steps involved in the DCF method:

- a. Forecast free cash flows available to equity holders over a forecast period, usually 5 to 10 years.
- b. Forecast free cash flows after the terminal year based on some simplifying assumptions.

³ Krishna Palepu,(2007). Introduction to business analysis & valuation. 1st ed. Cincinnati, Ohio: South-Western College Pub., pp.295-296

⁴ Krishna Palepu,(2007). Introduction to business analysis & valuation. 1st ed. Cincinnati, Ohio: South-Western College Pub., pp.308-309

- c. Discount free cash flows to equity holders at the cost of equity (WACC).

3. Market Approach –

a. Market Multiples of Comparable Companies

The Comparable Listed Companies valuation method is another widely used method whereby the valuation of assets is based upon how similar companies are currently priced on the market. Thus, the value of a company may be estimated by using multiple of similar companies listed on International Stock Exchanges. Each day stock prices reflect the instantaneous and independent pricing decisions of buyers and sellers around the world.

Therefore, using existing listed companies as a benchmark to value similar private companies is a viable valuation methodology.

A price multiple can be related to fundamentals through a DCF model. The steps that need to be followed in order to perform a multiple analysis are:

- i. Select the company organization to be valued.
- ii. Create a list of comparable companies similar in size, sector and maturity
- iii. Calculate for all comparable companies a number of ratios in order to compare them with the selected company (Price / Earnings, Price/Sales, Price/ Free Cash flows etc.)
- iv. Compare the ratio values to a number of market benchmarks
- v. Use the multiples of comparable companies as a specific value to create a price. Use benchmarks also.

b. Comparable Transactions Multiples

The Comparable Transactions⁵ method estimates the values of the subject company by comparing it to the price paid for similar companies that were targets of recent mergers and acquisitions. The Comparable Transaction method involves obtaining financial data from other similar transactions and applying it to the target company to obtain predicted value. These historical transactions involve companies that have similar lines of business as the company being valued.

The steps that need to be followed if we use this method are:

⁵ Aswath Damodaran, (2006). Damodaran on valuation. 1st ed. Hoboken, N.J.: John Wiley & Sons.

- Identify a set of comparable, recent acquisitions
- Observe the prices paid for those companies
- Apply that valuation to the firm

The most critical step in this valuation approach is the selection of a sample of transactions that took place during the recent years in the market and which present similarities with the transaction that is under consideration. Valuation multiples are selected and applied to the financials the subject company in order to derive an estimate of the market value of the subject company.

4. Net Adjusted Assets Method

A business valuation method⁶ used in acquisition accounting that changes the stated values of the company or organization's assets and liabilities to reflect its current fair market values. This accounting technique adjusts asset and liability values either up or down, in order to reflect the fair market value at the time of evaluation depending on whether it is an ongoing concern, forced liquidation or orderly liquidation basis. This value is calculated as follows:

Net Adjusted Assets Value = Fair market value of adjusted assets – Fair market value of adjusted liabilities

5. Asset-based Approach

This method is based on the value of the company's net assets (assets minus liabilities). It is rarely used to value a Going Concern⁷ company; however it is an appropriate method for Investment companies, Resource firms, financial services firms, small companies or early stage companies.

In valuing tangible assets, the Asset-based approach⁸ relies on the principle of substitution by recognizing that the investor will pay for an asset not more than its replacement cost. Therefore, the fair value of an asset is determined by reference to the reproduction or replacement cost of new equivalent assets.

Among the several valuation methods, Asset based approach results most of the times in the lowest valuation. This happens due to the fact that the use of a firm's assets in combination typically results in greater value creation than each of its parts individually.

⁶ Pablo Fernández, (2002). *Valuation methods and shareholder value creation*. 1st ed. San Diego, Calif.: Academic Press

⁷ a company that has the resources needed in order to continue to operate indefinitely

⁸ Jerald Pinto (2010). *Equity asset valuation*. 1st ed. Hoboken, N.J.: Wiley pp.385-386

Privatization Barriers and Success Points

The process of Privatization usually is a complex and difficult one, and this may sometimes lead to a result worse than the initial situation. Governments, have to face and deal with a number of barriers and difficulties in order to make it a success. These include the political system in the country, the legislation and the framework that SOEs and SGOs work on. There is an interrelation between the political parties and the inhabitants-voters that are usually taken into consideration when privatization is under review. Political parties are aware that issues like this are more of a concern to people and decisions that may affect social opinion are not easily taken. People consider privatization as a ‘clearance sale’ of public property,–that will affect the working conditions of all employees (leading to unemployment eventually) and finally national property sold to private sectors, probably overseas that leads to national security issues to rise as well. Offshore companies that may get control of SGO of vital importance such the ones offering water, electricity and telecommunication services may not have sensitivity issues when the country is in danger. Alternatively, their broader interests may overlap the interests of the country.

Privatization Procedure

If and when privatization is decided, it is obvious that there is no single method to be recommended for implementation. Each SGO should be treated and evaluated individually and decided if it is to privatize and what the best method for this is. The interests-of not only the state but the rest of the stakeholders (such as employees and public) must be considered. Also, a privatization plan is vital and should be developed. It should not be implemented yet until due diligence for the organization is completed. Finally, operations, market and legal situation must be evaluated.

According to The World Bank⁹, the steps to be followed in the privatization process may include:

1. Steering committee appointment. Its purpose is to oversee the privatization for each organization. Stakeholder groups must be represented in the committee with key people who are well educated and that fulfill special criteria.
2. Project director appointment, a person responsible for the implementation of the privatization to work closely with employees and management of the organization. He should have experience of the organization as well as the aspects that have to do with the privatization.
3. Appointment of advisors and consultants. These teams may include persons with knowledge in financials, legislation and human resources as well as experience both in Cyprus and international realities.

⁹ Welch, D. and Fremond, O. (1998). *The case-by-case approach to privatization*. 1st ed. Washington, D.C.: World Bank

4. Provision of due diligence and asset evaluation. Review of assets and liabilities that will assist in the determination of the form of privatization that suits best the interests of the stakeholders.
5. Suggest the form of privatization. The team of advisors should consider the evaluation and suggest the privatization form. Then, an implementation plan must be developed by an advisory team and be approved by a steering committee.
6. Approval of the implementation plan by state authorities. Council of ministers and House of Representatives (Parliament) must be informed about the plan and get updated periodically on the progress.
7. Consider the appointment of investor bankers. This step is applied when the form of an outright sale is chosen. The responsibility of the investor banker will be to find potential buyers.
8. Gather all relevant information, including financial, technical, employee and legal information necessary for privatization. Also launch a website.
9. Tender documents. Preparation of detailed tender documents including terms and conditions, rules and guidance of the evaluation procedure.
10. Workshops. Before tender documents are released, workshops must be organized with employees so as to satisfy their concerns and get their approval if possible on the tender documents.
11. Obtain comments from prospect bidders through a request for information process so as to the feeling of the market as far as privatization is concerned.
12. Initiate marketing of privatization to prospect buyers/bidders. Investment banker may be needed to assist in case a full sale form is adopted.
13. Proposal evaluation. An evaluation team is established and will consist of a project leader, advisory and consultancy teams in order to evaluate and rank proposals and finally make their suggestion to the steering committee and include a short list of the bidders.
14. Negotiation procedure, which will follow the evaluation of the proposals and will include negotiation procedures with the bidders that were ranked on top in order to choose a preferred bidder.
15. Closing stage. The conditions to the closing of privatization are discussed and finalized.
16. Oversight. Possible amendments that may need to be done after the closing and audit procedure that is required under the final privatization agreement. It will be for the benefit of the state to establish an authority to oversee the terms and represent state interest and control assets still under state control.

Privatizations in Cyprus

A fairly recent example of transferring of public operation from the public to the private sector was held in Cyprus, and that applies to the two national airports that

exist and operate in the country. Mr Pambos Ioannides¹⁰, who had a major role in the negotiations and the agreement, analysed the case during the Cyprus Privatization Conference¹¹. Up to May 2006, the two airports were operating by the state through Civil Aviation Department. Since the infrastructure was at its limits and new investment had to be performed, the government decided to proceed with a form of privatization of two airport terminals, one in Pafos and a bigger one in Larnaca, with a request for proposals regarding the design, implementation and operation for 25 years. This concession agreement, also known as BOT (Build-Operate-Transfer), indicates that after the 25 year period, the state will regain ownership. The project was awarded to Hermes Airports and delivered within deadlines. The whole cost was 700 million euros.

The winning investor had the responsibility to build the infrastructure, find the funds and repay them without any business risk for the state. The investor has the initiative to maximize profits without any warranties from the state which, however, earns a percentage of gross revenue as well as on the net profits of the investor.

The state had the responsibility for the necessary legislation framework and has a supervisory role retaining some operations as well (customs, immigration, and police).

As mentioned above, a very important aspect on the success of this process is the future of the employees under the new entity and their involvement in the implementation. Specifically, in this project, all the public employees either continued to work with duties related to their previous ones or were transferred in other sections of the department they belonged. In this way, the transition was smooth and without significant problems.

The overall process and outcome, after seven years of implementation, seems to be for the benefit of the state and the country and the project was awarded by Public-Private Finance magazine as the best contract signed in the European Union the last three years.

¹⁰ Managing Partner of Ioannides, Demetriou & Co Law Office,

¹¹ July 17th, 2013

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CHAPTER FOUR: PRIVATIZATION OF ELECTRIC SECTOR – INTERNATIONAL EXPERIENCE

Electricity in Cyprus

The sector of electricity in Cyprus is mainly controlled by the Electricity Authority of Cyprus ('EAC')¹². EAC is an independent, semi government Corporation established under the Electricity Development Law Cap.171 of 1952 in order to exercise and implement functions relating to the generation and supply of electric energy in Cyprus.

The above definition is used in Cyprus for corporations which are independent and which were established in accordance with the relevant Law, in order to render services in the utility field. Such corporations are governed by authorities, the members of which are appointed by the Council of Ministers. In the case of the Electricity Authority of Cyprus, the government, through the Minister of Commerce, Industry and Tourism, is empowered to give directives to the authority on matters appertaining to the general interest of the Republic.

EAC is governed by a Board of Directors, consisting of nine members, appointed by the President of the Republic and the Council of Ministers and it is accountable to the Minister of Commerce, Industry & Tourism. The authority is also subject to Parliamentary control.

When EAC was formed, its mission was the electrification of the island. This mission has recently been shifted towards greater customer satisfaction something which is in line with developments in the global utilities industry but also the well-being of the employees.

The new mission statement of EAC is the following: *“To provide our customers with the highest quality of safe and reliable services in the energy sector and other activities at competitive prices, respecting society, the environment and our people and contributing to the development of our country.”*

EACs operations are divided into 4 business units:

- Generation Business Unit

Cyprus does not have primary sources, so the Electricity Authority of Cyprus (EAC) is based on the generation of electricity exclusively on imported fuels, mainly crude oil. Currently, the EAC has three power stations with a total installed capacity of 1598 MW as below:

¹² Electricity Authority of Cyprus, (2013). *Annual Report 2012*. Nicosia: Electricity Authority of Cyprus

- Vassilikos Power Station (868 MW).
 - Dhekelia Power Station (460 MW).
 - Moni Power Station (270 MW).
- Networks Business Unit

The Networks Business Unit (NBU) is the EAC's largest Business Unit and is responsible for the development, maintenance and management of the National Transmission and Distribution Networks.

- Moreover, the Networks Business Unit is the Distribution System Operator (DSO) responsible for the operation of the Distribution System.
 - The Transmission and Distribution Management, the four (4) EAC Area Offices, as well as the Electronics and Communications, Civil and Building Works and the GIS Network Data System sections, all belong to the NBU.
- Customer Service & Development Business Unit
 - This unit is responsible for strategy development, policy formulation and annual business planning, via a balanced scorecard method. The process focuses on the alignment of efforts and the optimum use of resources by all the Organization's Units, for the achievement of the EAC's strategic aims and the realization of its vision.
 - All of the above will have a significant contribution towards the business development of the organization.
 - At the end of 2012, the total number of consumers in the government controlled areas of Cyprus stood at 548 498, a net increase of 4 588 or 0,8% since the end of 2011. Billed sales of electricity in the government-controlled areas amounted to 4 355,6 GWh, compared to 4 594,9 GWh the previous year, representing a decrease of 5,2%.

Privatization of Electric Sector in Cyprus

With the term 'privatization of electricity,' we refer to the services provided by the EAC since there are, already, a number of independent electricity producers through wind, solar and biomass. According to Transmission System Operator (TSO, 2014), Renewable Energy Sources (RES) penetration in electricity market in Cyprus, reached 5,2% in 2012 and 7,5% in 2013 (5,6% wind parks, 1,1% photovoltaic(solar) and 0,8% biomass).(Aeolic), solar, and other alternative sources. EAC, which is producing electricity through conventional production units at most, and it is still 100% state-owned, is referred namely in the MOU signed with Troika as one of the three SGOs to be considered for privatization.

The main MOU clause that refers to privatization is 3.6 where it states that:

“The Cypriot authorities will initiate a privatization plan to help improving economic efficiency through enhanced competition and encouragement of capital inflows, and to help restoring debt sustainability:

This plan should consider the privatization prospects of state-owned enterprises (SOEs) and semi-governmental organisations (SGOs), including, inter alia, CyTA (telecom), EAC (electricity), CPA (ports), as well as real estate/land assets. For the privatization of natural monopolies, an appropriate regulatory framework is a prerequisite; the privatization plan will be based on the report reviewing the operations and finances of SOEs, as well as the inventory of assets. The privatization plan will be created after consultation with the programme partners, including asset-specific timelines and intermediate steps [by Q3-2013]; In parallel, the specific legal and institutional framework for the privatization process will be drafted [by Q3-2013] and implemented [by Q4-2013], after consultation with the programme partners; and- The privatization plan identified by the Government after consultation with the programme partners will raise at least EUR 1 billion by the end of the programme period and an additional EUR 400 million by 2018 at the latest.”

International Experience

An attempt to review the international experience in the case of electricity, focusing on Europe, is performed. In figure 4.1, it is observed that as far as the electricity is concerned, the privatization landscape is uneven and in many cases, countries have not totally privatized the sector or even lost their majority (controlling) stake.

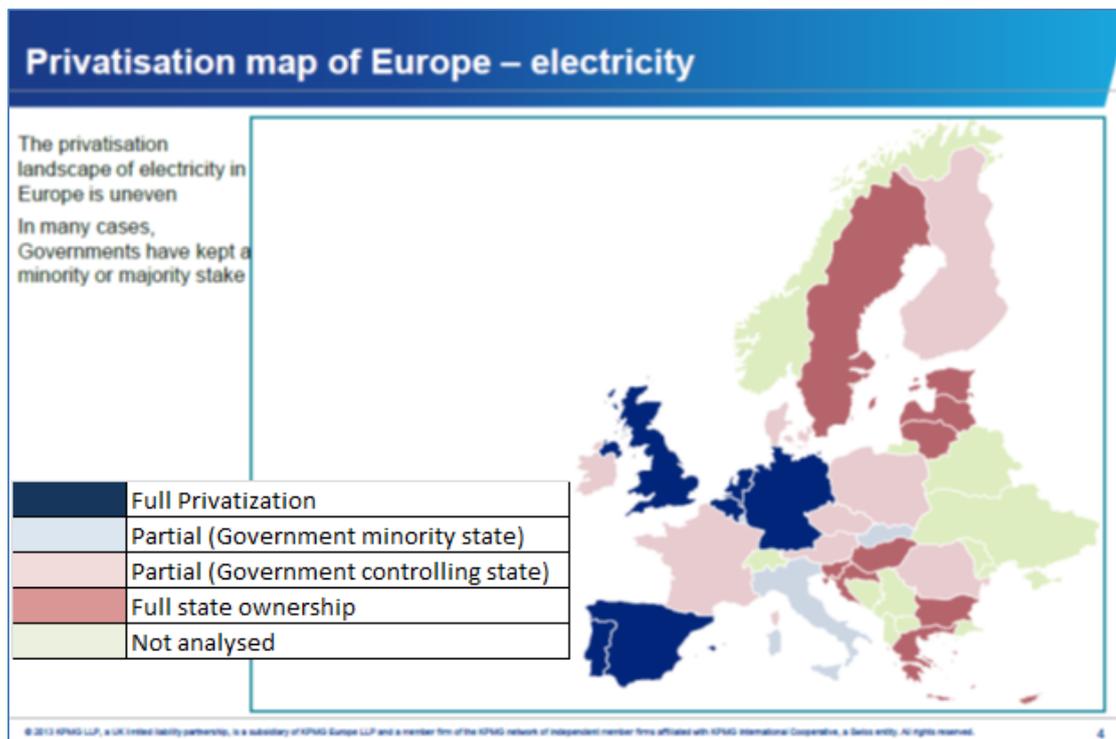


Figure 4.1: Privatization map of Europe - electricity

Therefore, it is observed that countries are either in delay in following a privatization plan regarding electricity, or they have decided that electricity should not be privatized. This decision is taken because of the risks and matters involved. A research on specific countries is performed, starting with the ones that have completely privatized electricity.

United Kingdom

In UK, electricity was under state control since 1990. Until then, national electricity company CEBG was the only producer and seller¹³. A privatization plan was adopted in order to achieve:

- Separation of electric power by activity on individual companies.
- Elimination of vertical integration.
- Liberalization of generation.
- Reform of the regional structure of distribution and retail supply.
- Gradual liberalization of retail supply.

During 1990, the assets of the CEBG are broken up into three new companies: Powergen, National Power and National Grid Company. Later, the nuclear component within National Power was removed and vested in another state owned business entity called Nuclear Electric. In 1991 Scottish electricity industry was privatized and at the next year Northern Ireland did the same. In 2001, CEBG was officially dissolute. Since November 2007, Northern Ireland generators must sell their power into the Single Electricity Market, an all-island market within the Republic of Ireland.

The electricity generation market in UK was developed so as to include many diverse generating companies. In 2006, eight companies had market shares more than 5% of the electricity produced. The three larger ones were British Energy, E.ON and RWE, the last two being German-based companies. Seven companies were operating in electricity distribution, and the transmission was transferred to National Grid Company Plc, who performs as a Transmission System Operator (TSO), primarily owned by the privatised companies and later entered stock exchange market.

Germany

Electricity market in Germany is today dominated by four electricity supply companies which control 90% of the electricity generation¹⁴. Liberalization of the electricity sector started in 1998 and was completed in 1999 by transposing the EU Electricity Directive into national law. Initially, the federal states were holding the

¹³ Heddenhausen, M. (2007). Privatizations in Europe's liberalised electricity markets- the cases of the United Kingdom, Sweden, Germany and France. *Stiftung Wissenschaft und Politik*

¹⁴ Fasbender, K. (2004). *Selected principles, elements and experiences of privatisation in Germany*. 1st ed. Hamburg, Germany: Hamburg Institute of International Economics (HWWA).

shares of the public utilities. Gradually, shares were sold so as the local authorities have their budgets fulfilled. In 2003, 45% of the electricity public utilities included private investors. In 2007, out of the four big players, only one (EnBW AG) was still under the control of the state with 50.88%. As far as distribution is concerned, the privatized network energy supply raised their market share to almost 73% in 2004 whilst the local authorities' percentage was declined to 27%. In addition to that, the number of the municipal utilities dropped to 700 from 900, like 10 years before.

Sweden

The reform of the electricity market in Sweden (Jamasp Tooraj M.Pollitt, 2005) involved the legal separation of generation and networks. Network grids remained regulated, and generation was under competitive terms.

Even though the electricity industry and legislation are similar to Germany, unlike the oligopoly of vertical integrated companies that exist in Germany, in Sweden the market is dominated by only one, state-owned business Vattenfall AB. About 45% of the electricity is produced by nuclear power, 47% by hydro power and the remaining 8% with fossil and biofuel as well as wind power.

Beginning of 1996, the so-called 'Nord Pool' was established, initiating power exchange in Nordic countries. Nord Pool was owned by Svenska Kraftnat, a state owned agency responsible for Sweden's national grid performing as system operator, and Statnett, which is the Norwegian public corporation responsible for the grid of the country. Later this was also joined by Finland and Eastern Denmark.

Even though, Vattenfall was legally privatised, it remained completely state-owned. Besides Vattenfall, electricity production today is dominated by two companies, the German company E.ON and Fortum, Finnish company which 50% is owned by Finnish state. All together these three companies produce more than 88% of the country electricity production.

France

Electricity was nationalized in France in 1946 with the creation of Electricité de France (EDF)¹⁵. Prior to that, the electricity industry included 200 generators and 1100 enterprises in transmission and distribution. Being a public company, EDF was under the control and authorisation of the government and tariffs and investment programs were approved by the state. Nowadays in France about 75% of the electricity is generated through nuclear power plants (IEA, 2010).

In 2004, EDF was privatized by a law, something that brought many protests and demonstrations by employees, trade unions and part of public. Protests included rallies but also blackouts and targeted power cuts. With that privatization law, the

¹⁵ Andre, C.(2006) *Privatizations in France. Presom; WG1: Background and history of liberalization and privatization in the EU. Presom, WG1.*

French state was obliged to maintain 70% of the capital. In November 2005, 12.7% of the shares were sold, out of which 1.9% to employees, raising 7.35 billion euros.

Knowing that it will lose a number of customers and thus lower profits, EDF was restructured and in addition to that they decided to expand overseas. Some of the major agreements were the purchase of 45% of German company EnBW AG entering British Market as well.

Greece

Public Power Corporation S.A. (PPC) is the incumbent power producer and supplier in Greece with more than 7.5 million customers and an installed capacity which, at 12,800 MW, exceeds 80% of the country's total.

Its power generation mix includes lignite-fired plants, gas and oil plants as well as hydro and renewable energy. PPC also owns and operates the national electricity transmission system and the distribution networks.

The Greek government holds 51% of PPC, which is listed on the Athens Stock Exchange and prepares PPC for the privatization.

In July 2013, the Greek deputy Minister of the Ministry of Environment, Energy and Climate Change Makis Papageorgiou, prepared a three-phase plan that provides the division of PPC in three parts:

- 1) Establish unbundling of ownership for the Independent Transmission System Operator (ITSO) from its 100 percent parent company, PPC, with the introduction of an investor to a percentage up to 51 percent.
- 2) Division of the electricity business in two with the creation of a big and a small PPC. Power plants, staff and clientele equivalent to 30% of the current business will be transferred to the big PPC. The small PPC will be sold by tender and
- 3) The main PPC will be privatized, with Greek State offering 17% of its shares to attract a strategic investor.

The whole process will be completed by the first trimester of 2016, according to the plan.

Portugal

The so-called 'Portugal privatization model' was mentioned many times by Cyprus government officials as a model to be considered for the country. In fact, the President of the Republic of Cyprus, Mr. Nicos Anastasiades, during his first press conference on 31/3/2013 said: *"there are thoughts for implementation of the Portugal model of privatizations that refer to the establishment of a parent company in which all assets*

of the SGOs will be included. This model may be applied to CyTA, EAC and CPA,” Mr. Anastasiades said: *“In this regard, we will have a closer look into this model.”*

Information about electricity and privatization in Portugal was derived after an interview with the Chief Executive Officer of EDP (Mexia, 2013): Privatization begun in Portugal in 1990 when the parliament voted in favour of the law where government organizations were transformed into public companies with a share capital which is entirely owned by the government. In 1991, PARTEST SGPS SA was established with the aim of privatizations in Portugal. The shares of the public companies were transferred from state to PARTEST. In 2000, the Holding company owned by the state was established and gained ownership of PARTEST and other companies as well. In order to keep the control to privatized companies, the government initiated special tools or clauses of governance for the privatized companies. One of them was the so-called ‘golden shares.’ These golden shares however, included terms and clauses such as:

- Maximum number of shares allowed to be owned by non-Portuguese.
- Maximum number of shares allowed to be owned by one physical or legal entity.
- Veto rights.

European commission challenged this, and in 2010, European court issued a decision which mentioned that issue of golden shares was against European Legislation because of discrimination terms and the freedom in fund movement within EU. This decision, made the government of Portugal, in 2011, to abolish this type of shares.

Specifically in the energy and electricity sector, the national electricity company in Portugal (EDP) was created in 1975 with the nationalization of the vertical electricity companies. EDP activities were generation, transmission, distribution and supply of electricity as well as the supply of gas. EDP has the leading position in Portugal with 55% of the overall power generation (10,500MW). EDP is also active in Spain, United States, Brazil, France, Belgium, Poland, Romania and Italy.

There were nine milestones in the privatization of EDP:

1. June 1997, share capital of 29,99% was sold to small investors, public, institutional investors and employees (5%).
2. May 1998. A strategic agreement was signed with Spanish company Iberdrola with a right to gain ownership of 2.25%. Iberdrola exercised that right.
3. June 1998. An additional 13.95% of the shares were sold.
4. October 2000. Another 20% of the capital was sold.
5. December 2004. Cajastur Company acquires 8.51%.
6. December 2005. Parpublica issued 4.38% in security bonds convertible into shares.

7. November 2007. Parpublica issue 4.14% in security bonds convertible into shares.
8. December 2011. A Chinese company, China Three Gorges, acquires 21.35% with revenue of 2.7 billion euros for the state.
9. February 2013. Last 4.14% of shares were sold.

In Table 4.1 below, in the share registry of Parpublica¹⁶, one can observe the share apportionment of EDP as per 13th of March 2013 where the state does not have any significant share (Edp.pt, 2013).

¹⁶ London Stock Exchange 2013

Table 4.1: Share Apportionment of Parpublica

SHAREHOLDERS	No. of Shares	% Capital	% Exercisable Votes
China Three Gorges	780.633.782	21,35%	21,35%
Iberdrola Energía S.A.U.	248.437.516	6,79%	6,79%
Oppidum	226.046.616	6,18%	6,18%
José de Mello Energia, S.A.	168.077.151	4,60%	4,60%
SENFORA SARL	148.431.999	4,06%	4,06%
Grupo BCP + Fundo de Pensões do Grupo BCP	122.667.974	3,35%	3,35%
Sonatrach	87.007.443	2,38%	2,38%
Banco Espírito Santo, S.A.	86.865.254	2,38%	2,38%
Qatar Holding LLC	82.868.933	2,27%	2,27%
Capital Research and Management Company	73.625.043	2,01%	2,01%
BlackRock, Inc.	73.268.245	2,00%	2,00%
EDP (Treasury Stock)	31.904.523	0,87%	-
Remaining shareholders	1.526.703.236	41,75%	-
Total	3.656.537.715	100,00%	

Therefore, it is observed that EDP was privatized with a mixed method of private participation of 40% and an IPO of 60%. REN was sold in 2000 (30%) and 2006 (19%) through an IPO. In 2012 with a typical sale of shares, 40% was sold for 0.6 billion euros. Approximately 10% of REN remains to State through Parpublica.

Lessons Learned

It is interesting to discuss the result of what happened to countries that proceeded with the implementation of privatizations in energy/ electricity industry sector, focusing on the problems that occurred.

United Kingdom, being the first country to privatize electricity, has had the problems of the first mover. It is interesting, though, to see that some of the problems have not been resolved but on the contrary, new ones emerge.

- The pricing system for electricity is complicated and thus difficult for the consumer to understand. YouGov research on behalf of uSwitch¹⁷ found 75% of people find energy bills confusing, and only four in ten (4/10) could understand the calculations on their bill.
- The pricing system benefits private companies and their profits, more than the consumer. 61% of the public believes that the concern of UK Utilities industry is not focus on the best interest of their customers and society (YouGov 2014).
- Even though the prices of the fuel used are reduced, and there is a reduction in the cost of production, mainly through job position cutting, energy prices are rising at up to eight times higher than increases in average earnings according to The Guardian (2014) and Citizens Advice (2014) as shown in Figure 4.1. The big private players are said to have found ways to manipulate the market to keep prices high¹⁸. According to the results of YouGov survey, 67% of the consumers believe that the energy companies act as a cartel.

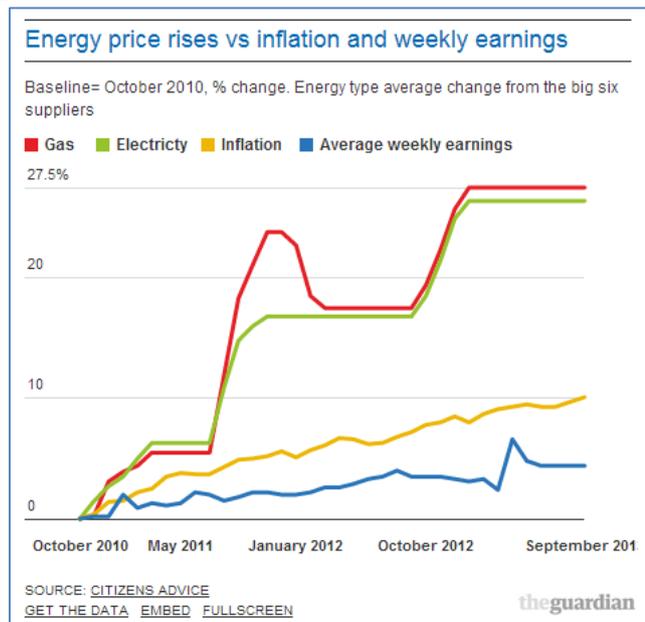


Figure 4.2 Energy Price Rises in United Kingdom

Regarding Portugal, whose model was examined in detail within this report, through an interview we had with the Chief Executive Officer of EDP, some interesting points were arisen (Mexia, 2013):

- In general prices have gone up significantly.

¹⁷ Uswitch.com, (2014). *Energy bills explained - a guide to energy bills*. [online] Available at: <http://www.uswitch.com/gas-electricity/guides/energy-bills/>

¹⁸ One News Page [UK], (2013). *Energy price increases: how do the big six compare?*. [online] Available at: <http://www.onenewspage.co.uk/n/Money/74w4f8fuu/Energy-price-increases-how-do-the-big-six.htm>

- VAT was increased from 6% to 23%, and this is one, but not the only, of the reasons for the increase in price.
- There was a restructure in pricing policy which led to price increases in some customer categories and decreases in some others.
- The community responded negatively in the privatization.
- Salaries and benefits were not affected so far, but recently there are negotiations between management and trade unions regarding the collective agreement.
- Employees' concerns were handled by continuously informing the staff on the happenings.
- There was a great concern regarding the recent acquire of 21.35% by China Three Gorges due to the fear of adoption of a different culture.

Pricing problems seem to have occurred in many countries. In Bulgaria, for example, after privatization prices were dramatically increased. This resulted in massive demonstrations in early 2013 after consumers received electricity bills, twice as high as last year at the same period, forcing the government to resign¹⁹. Outside Europe, even in countries like Australia, according to the report of Australian Energy Market Commission²⁰, an increase in electricity prices was observed during the last years by 170% whilst the consumer's index was increased by 60%.

United States is not an exemption in privatized electricity problems. Enron, a well-known company, collapsed with 4,000 employees in unemployment. The same company was accused of price increases using techniques like forcing with fake electricity shortages and blackout threatening In California (Freidman, 2009,) while no investments were performed in the electricity infrastructure. As a result, a complete blackout happened, leaving households and business without electricity. The economic damages were enormous. In addition to that, prices were increased by five times between 1999 and 2001, (Cicchetti, Dubin and Long, 2004).

All the above are just a few of the examples that should be avoided. In the recent years, a new term was invented. When a state, decides that the problems due to privatization are too many and affect public (and possibly voters), they are considering 'Renationalization.' That is the opposite of privatization and refers to the state regaining the property/utility back from the private sector.

Germany is one of the countries that are not only considering, but have already proceeded with the implementation of *Renationalization* of electricity. Recently more than half of the local electricity companies have been renationalized. By 2016, it is

¹⁹ The Economist, (2014). *Power protests*. [online] Available at: <http://www.economist.com/news/europe/21572252-bulgarian-prime-minister-unexpectedly-resigns-power-protests>

²⁰ AEMC, (2013). *Residential Electricity Price Trends report*, 13 December 2013, Sydney

expected that 2/3 will be owned by local municipalities. A recent example, published as a press release in the company's website²¹, was the acquisition of Evonik-Steag, the fifth biggest electricity producer in the country, by a consortium of seven district areas (Stadwerke Konsortium Rhein-Ruhr). In Lithuania, according to IEA (2012), the whole energy system was bought back from the government. Netherland has recently included in the national legislation a clause that prohibits the privatization of the electricity networking and distribution system. This was challenged in the European Court of Justice (ECJ) which decided (LJN: BQ9210, NJ 2012/141, LJN: BQ9212 and LJN: BQ9214) that this is allowed to exist for national security reasons and reasons of network adequacy.

It is a fact that electricity price in Cyprus, according to the latest Quarterly Report on European Electricity Markets (European Commission, 2013, pp.26), is one of the highest worldwide and the highest in E.U. There is anticipation to the public that with privatization prices will decrease. How accurate this argument is? If we have a detailed analysis on the electricity cost, we can observe that 80% include inelastic costs, fees and taxes. The payroll cost is about 7%, and only 13% include operational and elastic expenses. It is, therefore, obvious that no significant price reduction can be achieved, even if there are significant savings in operational costs. The only way for lower costs is, if and when, an alternative and much cheaper fuel is obtained. Especially for Cyprus, being an isolated electric system, there is a danger of a private oligopoly or monopoly with all the dangers and negative influences that this include in addition to the price increase.

²¹

<http://corporate.evonik.de/de/presse/pressemitteilungen/pages/newsdetails.aspx?newsid=17976>

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CHAPTER FIVE: ALTERNATIVE STRATEGY

Since privatizations sometimes have effects that are not for the benefit of the stakeholders, an alternative option is examined. It is based on the idea that if most of the reasons that lead states to proceed with privatization have to do with the state itself, then the effort should have been to improve the state instead of giving away national wealth. With this option, state attempts to improve efficiency and productivity through alterations, changes and enhancements in management and implementation techniques. These changes can be successfully achieved through reform of civil service, innovation, improving internal techniques and incentive schemes, instead of privatizing public utilities.

Public Sector Model

In order to study this option, there is a need to identify what the current state model is, and what are the advantages and disadvantages of the current model.

In the so-called state sector or state model, the government has full ownership of the SGO, the responsibility of the maintenance, investment and financing. It also has full control and autonomy to rule pricing policies and fees. Projects or investment are financed in general with 100% debt, or by own funds of the SGO or the state and no private investors participate in the share capital.

The disadvantages of the 100% state model are:

- As a general rule, there is no incentive to restructure the capital.
- It is said to have limited earnings for the state.
- All business risks remain to the state/authority.
- There is no development in efficiency and productivity. There is a tendency for the private sector to be more efficient than the public, even though it is not a universal result.²²

Specifically for Cyprus, SGOs are self-governed organizations, established by the state with legislation for a particular purpose in order to serve the public interest. The state assigned activity to each one of them, *i.e.* electricity, ports, telecommunications, sports.) These SGOs, even though they are 100% state owned, they retain their autonomy and independence.

The main characteristics of the SGOs in Cyprus are:

- They are established with special legislation, and they exercise public authority assigned to them by the state.

²² Surveys carried out by Domberger and Piggott(1986), Borchering et al (1982), Millward(1982)

- They are administered by boards, appointed by the Council of Ministers. The board members have no salary, but they are compensated for each meeting.
- They are supervised by the responsible minister. EAC is under the control of the Ministry of Energy, Industry and Tourism.
- Council of Ministers cannot dismiss any board member unless the decision is totally justified and refers to specific reasons.
- The state is the only a shareholder of the SGO.
- The boards are obliged to prepare the budget every year and forward it to the Council of Ministers, through the responsible Ministry. These budgets have to be finally approved by the House of Representatives.
- In addition to the budget, the House of Representatives can exercise control on the procedures of the SGO.
- An annual report is prepared and delivered to the Council of Ministers and the House of Representatives.
- The everyday decisions (staff appointments, promotions, deals) are considered as administrative actions that can be controlled by the Court.
- The decisions are also reviewed by the General Auditor of the government.
- Board members are asked to provide a declaration of interest.
- The employees have the same legal status, same duties and obligations as the public servants.

Improvements to be Considered

There are several alterations and enhancements that need to be implemented so as the future of the SGOs is within the state and not in the private sector including changes that will affect the governance, the institutional framework and the legislation but most of the entire environment and the mentality of the stakeholders. These changes must include different and modern procedures in the appointment of the boards, based on criteria that will include their academic and business experience. In addition, duties and obligations of the board must be clearly defined through appropriate legislation. In large SGOs like EAC, the possibility of an executive chairman and probably an executive vice-chairman has to be seriously considered.

These SGOs must include modern methods of management focusing in the activities of the actual business units. A system must be developed in order to give incentives to the management and employees. These incentives must be correlated with meeting-the budget and the targets of the organization.

The current organizational structure of EAC is shown in Appendix 2. It has already been agreed between the management and the trade unions that the new structure adopted is as shown in Appendix 3. One of the most important points of the new structure is that it consists of three business units (Generation, Transmission, Supply) instead of six. Further developments must be adopted that will include:

- The position of the General Manager must be reconsidered and probably be replaced by the duties of three executive managers in relevant business units.
- The three business units to be supervised by board subcommittees.
- TSO to be returned to EAC under transmission business unit.
- Internal audit to be performed by a third party.
- Transmission and distribution will be divided internally but under the same management for synergies.
- Generation and supply must change their regulations and working terms.
- These requirements must be easily updated according to the current conditions and external environment.
- External control by the government auditor in addition to the external accounting auditors.
- Examine the possibility of having two management geographic areas in transmission business unit (Nicosia-Larnaca-Famagusta & Limassol-Pafos) instead of four (Nicosia, Limassol, Larnaca, Pafos).
- Organize number of employees and business jobs according to statistics (based on number of customers and transmission system length).
- Waiver of permanence for the employees on the basis of mandatory retirement where there is a proven need for replacement.
- Mandatory retirement for employees where proved that there is no ability to perform their duties (secondary job, medical reasons etc).
- Executive managers in business units with individual contracts.

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CHAPTER SIX: A STATISTICAL ANALYSIS

A research was recently performed by the University of Nicosia²³. According to the research the following results had arisen, regarding the privatization and the view that the society in Cyprus looks at them. In this research, 400 persons participated by telephone random selection. The results of the research showed that:

- 79% of the population believes that a privatization will have adverse effects for the employees, whilst only 12% feels that there will be positive results and 9% feels that there will be no effects at all.
- The results are quite similar on the question if they feel that there will be job position cut-offs. 79% believe that a privatization will lead to job dismissals and redundancies, 8% that new job positions will be opened and 13% that there will be not real effect.
- 53% considers that privatizations will be against the public interest whilst 47% feels that it will be in favour.
- 46% feels that there will be negative effects for the consumers, 42% feel that there will be positive effects for the consumers and 12% thinks that consumers will not be affected either positively or negatively.
- As a result of privatization, 59% feels that the state monopolies will be handed to the private sector thus transformed into private monopolies, 23% feel that state monopolies will be dissolved, and 18% that SGOs will be transformed into smaller companies.
- Another possible effect is a price change after privatization. 43% believe that pricing of the services will be increased and 35% that they will be decreased. 22% believe that there will not be any change.
- In the general question if people are in favour or against privatizations, 51% responded that they are against, 46% that they are in favour and 3% that they have no definite opinion on the matter.
- From the responders that are working in an SGO, 74% feel that their income will be reduced whilst 26% think that it will not.

The purpose of the last question was to find out what the feeling of community is, regarding the reasons that led to privatizations. The answers were the following:

- 36% believe that privatizations will be performed because of the MOU with Troika clause.
- 26% believe that privatizations will be performed because of the MOU with Troika clause and also because it is the policy of the current government.
- 11% believe that privatizations will be performed because it is the policy of the current government.

²³ Research performed between the dates 26-27 November 2013. Broadcasted in signalive.com

- 26% believe that privatizations will be performed because it is about time that these SGOs change their methods of work.
- 2% had no opinion.

The findings of this research will be compared to the ones of this work with the goal to reach some conclusions.

The Sample - Collection of Data

The statement of the problem and the questions under investigation were the following:

- How happy are the stakeholders (employees and consumers) with the current situation in electricity?
- What are their opinions about privatizations in general?
- What are their opinions about electricity in particular?
- What is their opinion if an alternative to privatization method is implemented?

In an attempt to find the feelings of the stakeholders for the above issues, a questionnaire was developed. This questionnaire was addressed both to employees that work in EAC (EAC sample) and to consumers (Cyprus sample). The total number of responders was 108 which are considered to be a reliable sample.

The questionnaire was divided into four parts. In the first section, general information was included; in the second there were rating questions regarding the EAC services in the current environment; in the third section people were asked about their opinion on privatization issues. Finally, in the last section, there were asked to include any further information and comments they considered as important, and they were not included in the research.

Research Instrument

A structured questionnaire was used as an instrument for research, so as to collect necessary information from responders. Questionnaires are “*any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers.*” (Brown, 2001)

The questionnaire in this research included attitude and rating scales as well as essay type questions. It was selected since it is the main data collection method used for not only quantitative, but qualitative data as well. Questions used were factual (demographic, education), behavioral (present deeds of responders) and attitudinal (covering opinions, beliefs and attitudes).

Validation Procedure

Both the validity and the reliability of the questionnaire must be established. For this reason, various tests are performed. Reliability is the degree to which the questionnaire has the same outcome if administered again. Validity indicates the degree to which a questionnaire reflects reality. Validity can be tested in many ways. First of all, internal validity check was performed, in order to see whether questions within the questionnaire agree with each other. External validity is also performed so as to see if generalizations can be made further to the sample. Discriminant validity, being the ability of the questionnaire to detect differences between groups is also performed. In the study, the groups can be identified as EAC sample and Cyprus sample.

Data Gathering Procedure

Specialized software, designed for this kind of research was acquired and used, SurveyMonkey (www.surveymonkey.com). The questionnaire was prepared during the week 22-29 of September 2013 and after all tests were performed it was launched on Sunday, September 29th. The target sample was divided into two main groups. First group was EAC employees (EAC sample) and second non-EAC employees (Cyprus sample). Both groups were informed on the survey by email, social media (Facebook, twitter) and telephone. They were clearly informed about the ethical concepts of the research which included anonymity and confidentiality. They all filled the questionnaire on-line and until October 10th, 108 persons participated in the research.

Data Processing Procedure and Statistical Treatment of Data

Since the questionnaire was answered online, there was no need for manual entry of the information given. The answers that were entered by the responders were processed by the software and results are shown both in arithmetic and graphical format as well. The results were extracted in spreadsheet format and thereafter imported in IBM SPSS Statistics software which was also acquired for processing.

Questionnaires that were not fully answered or incomplete and were defined as vital (non-demographic section questions) were excluded from the final sample.

Ethical Considerations

All necessary actions so were taken, so as not to put the participating staff in danger. The measures taken were the following:

- People were asked to participate voluntarily, and nobody was forced to do it.
- They were invited through personal email not knowing who else was invited to participate.

- They were asked to work on it during their free time so as not to interfere with their work.
- They filled it online without the need to put their name on securing their anonymity.

Empirical Findings or Results

Presentation of Data

The questionnaire used, and primary results of the SPSS system are represented in Appendix 1.

Below there is a complete analysis of the results in three sections.

- Demographic information.
- Perspective on services provided.
- Perspective on privatization.

Section A. Demographic information

This first section included the non-qualitative information of the participants in order to perform a deeper analysis of the mixture of the responses collected. In order to analyze further we present the results for the demographic section in detail starting with gender analysis in Table 6.1 and Figure 6.1 below:

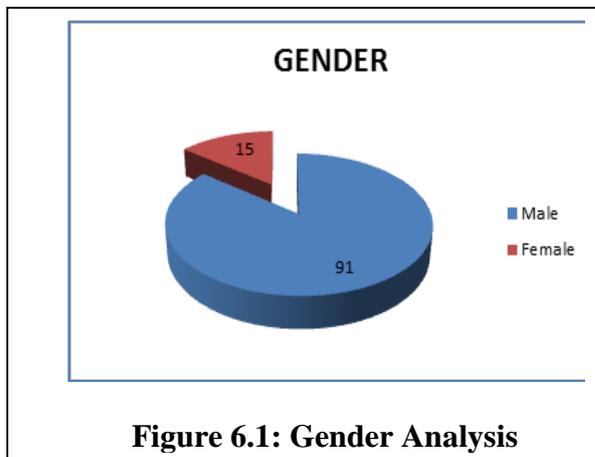


Table 6.1: Gender Analysis

GENDER	#
Male	91
Female	15

Furthermore, there is a graphical presentation of the age group (Figure 6.2) for the responses obtained and shown in Table 6.2 below.

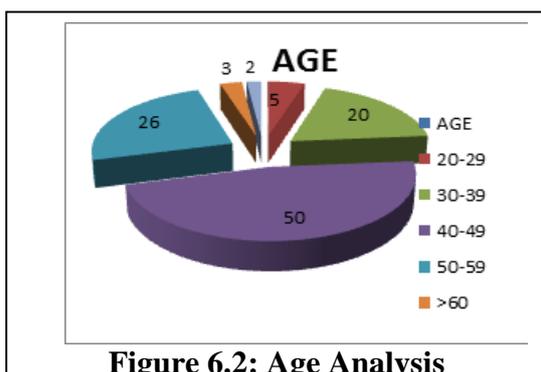


Table 6.2: Age Analysis

AGE	#
20-29	5
30-39	20
40-49	50
50-59	26
>60	3
Undefined	2

Responses were separated into two groups representing the stakeholders that participated in the study. Number of questionnaires filled by EAC employees and Consumers are shown in Table 6.3 and Figure 6.3.

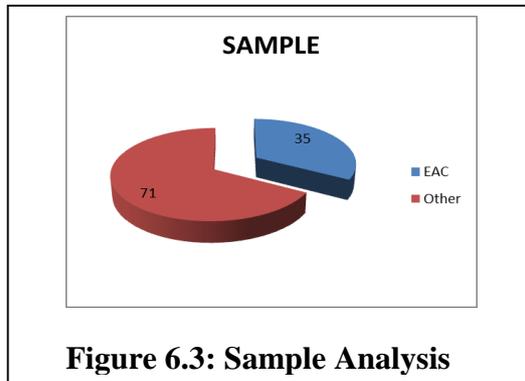


Table 6.3: Sample Analysis

SAMPLE	#
EAC	35
Cyprus	71

An extra analysis for the position that participants hold in their work is presented in Table 6.4 and Figure 6.4.

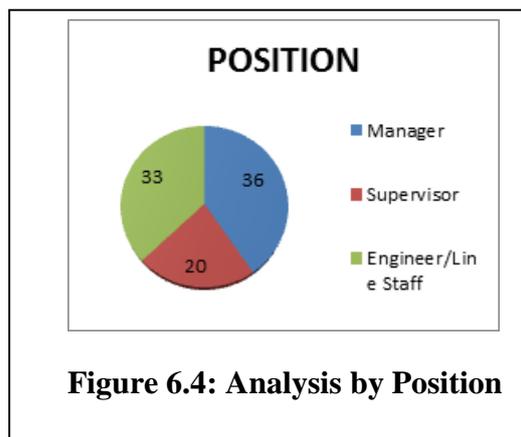


Table 6.4: Analysis by Position

POSITION	#
Manager	36
Supervisor	20
Engineer/Line Staff	33

Section B – Rankings of EAC Services

Second section of the questionnaire includes the answers of the participants and their feeling about the services provided by the Electricity Authority of Cyprus in its current status. Questions that were not answered by participants are noted, and the results are shown in both formats (with and without unanswered questions) in Table 6.5 and Figure 6.5.

Table 6.5: Opinions for EAC Services

SERVICE	Overall Opinion for Service %	Overall Opinion for Service %
	Including Undefined	Excluding Undefined
Very unhappy	5%	6%
Unhappy	5%	6%
Somewhat Unhappy	7%	8%
Undecided	11%	13%
Somewhat happy	21%	24%
Happy	29%	33%
Very happy	9%	10%
Undefined	12%	0%
	100%	100%

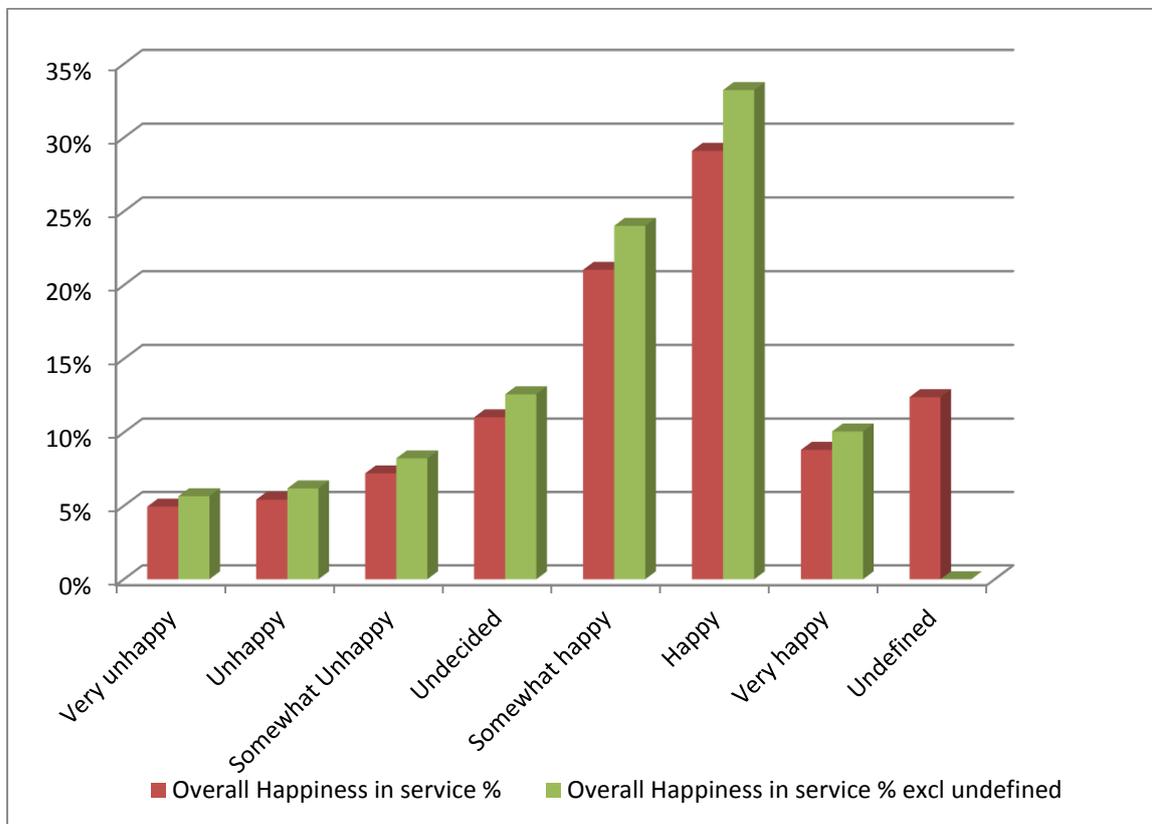


Figure 6.5: Opinions for EAC Services

Section C – Privatization Opinions

In the third section of the questionnaire, the opinions of the participants as regards the privatization issue are presented. The same procedure was followed here as well for the questions that were not answered by participants. These were identified, and the results are presented in both formats (with and without unanswered questions).

Questions were grouped into variables where there was a feeling of a correlation between them. Then results were obtained, after being processed in SPSS in order to achieve Descriptive Statistics and Correlations for the overall sample and separately for EAC employees and non-EAC employees (consumers).

Group C1- Opinions regarding Privatization

This included the following questions:

- 1 Telecommunications should be privatized.
- 2 Water Authorities should be privatized.
- 3 Port authorities should be privatized.
- 4 Electricity should be privatized.

The results are shown in the following Table 6.6 and graphically presented in Figure 6.6:

Table 6.6 Opinions on Privatization

	Overall Agreement in Privatization %	Overall Agreement in Privatization % excl. undefined
Strongly Disagree	18%	21%
Disagree	21%	25%
Undecided	13%	15%
Agree	25%	30%
Strongly Agree	8%	10%
Undefined	15%	0%
	100%	100%

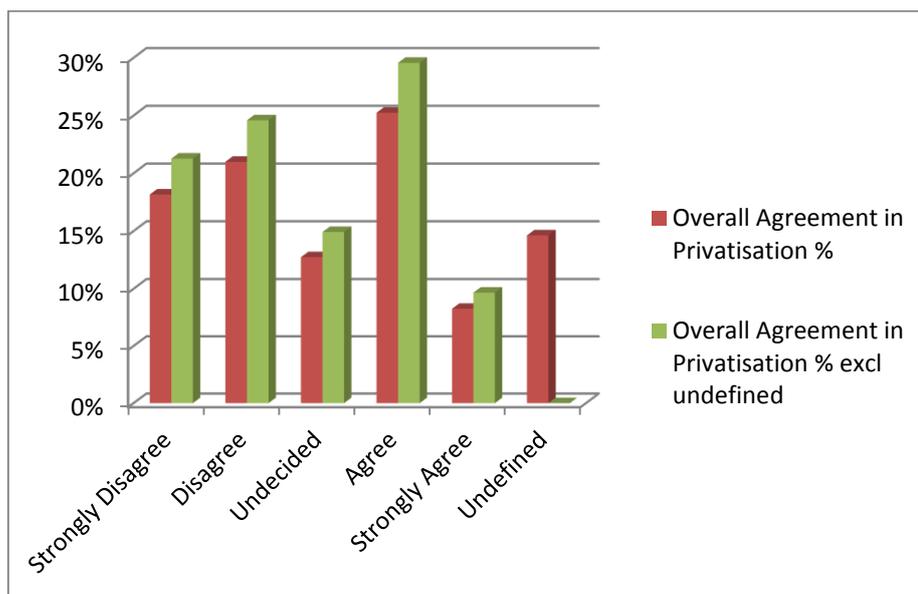


Figure 6.6 Opinions for Privatization

Group C2- Privatization effects to staff Efficiency²⁴ and Productivity²⁵

This grouped and analyzed the answers to the following questions:

- 8 Privatization of electricity will lead to better working conditions.
- 12 Privatization of electricity will lead to increased productivity.

The results obtained for these two questions after been processed are shown in percentage format in Table 6.7 and Figure 6.7 below:

Table 6.7: Privatization Effect in Efficiency and Productivity

	Overall Agreement in Production Increase %	Overall Agreement in Production Increase % excl. undefined
Strongly Disagree	8%	10%
Disagree	19%	22%
Undecided	21%	25%
Agree	26%	31%
Strongly Agree	10%	12%
Undefined	15%	0%
	100%	100%

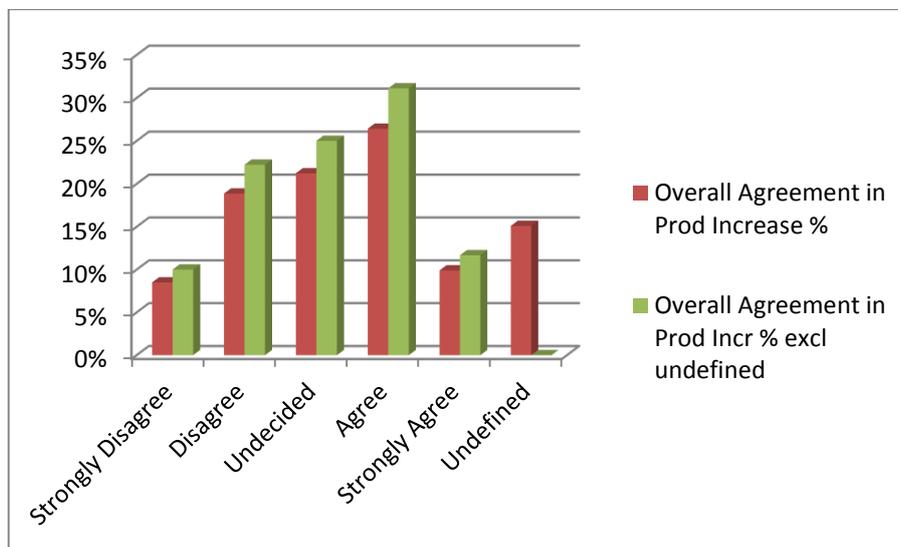


Figure.6.7: Privatization Effect in Efficiency and Productivity

Group C3- Privatization disadvantages for the employees

²⁴ Efficiency is the comparison of the observed and optimal values of input and output. (Fried, Lovell and Schmidt, 1993 pp.7)

²⁵ Productivity is the ratio of the employee output to the input. (Fried, Lovell and Schmidt, 1993, pp.8)

Includes results on the following questions:

- 6 Privatization of electricity will lead to increased competition
- 7 Privatization of electricity will lead to increased unemployment
- 10 Privatization of electricity will lead to increased state earnings

Table 6.8: Privatization Negative Effect on Staff

	Overall Agreement Worse for Staff %	Overall Agreement Worse for Staff % excl. undefined
Strongly Disagree	5%	6%
Disagree	13%	15%
Undecided	14%	16%
Agree	39%	46%
Strongly Agree	15%	17%
Undefined	15%	0%
	100%	100%

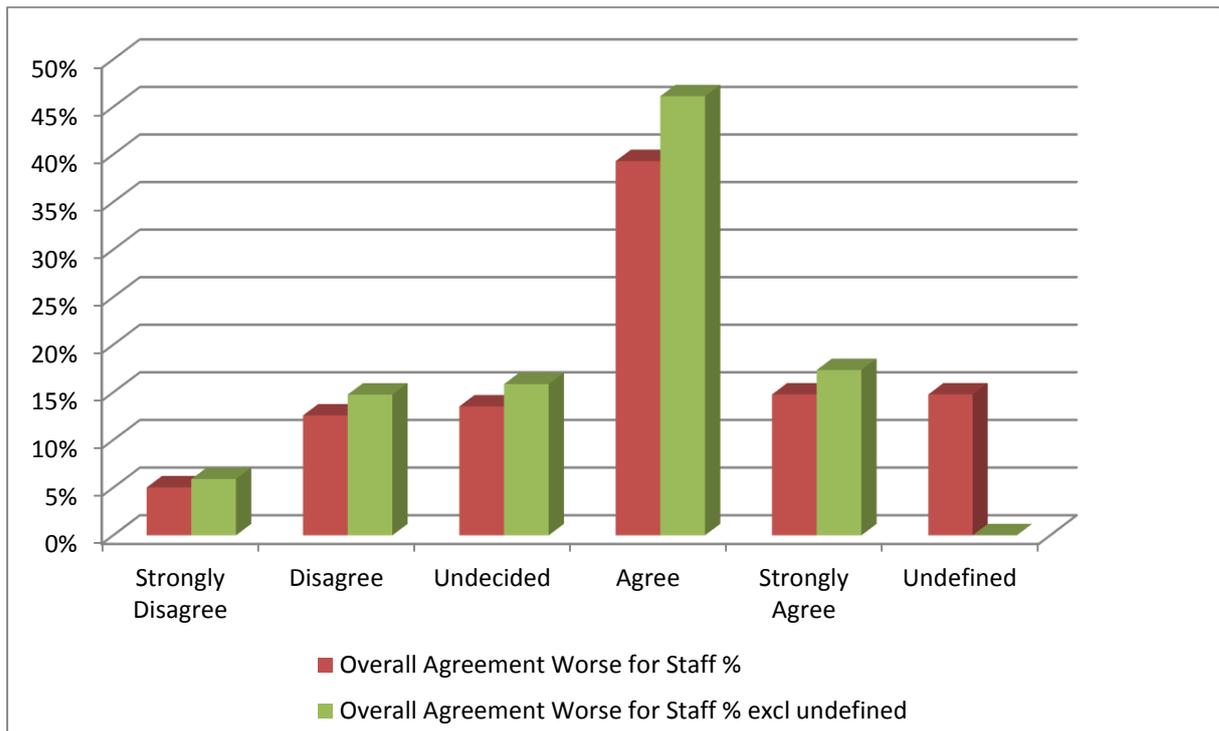


Figure 6.8: Privatization Negative Effect on Staff

Group C4- Privatization advantages for the public

Includes answers to the following questions:

- 9 Privatization of electricity will lead to increased competition
- 10 Privatization of electricity will lead to increased unemployment
- 11 Privatization of electricity will lead to increased state earnings

- 12 Privatization of electricity will lead to increased productivity
- 13 A privatized company will care for public more than a state owned

These are presented in Table 6.9 and with a graphical presentation in Figure 6.9 below:

Table 6.9: Privatization Positive Effect on Public

	Better for Public %	Better for Public % % excl. undefined
Strongly Disagree	12%	14%
Disagree	20%	23%
Undecided	15%	18%
Agree	28%	33%
Strongly Agree	10%	12%
Undefined	15%	0%
	100%	100%

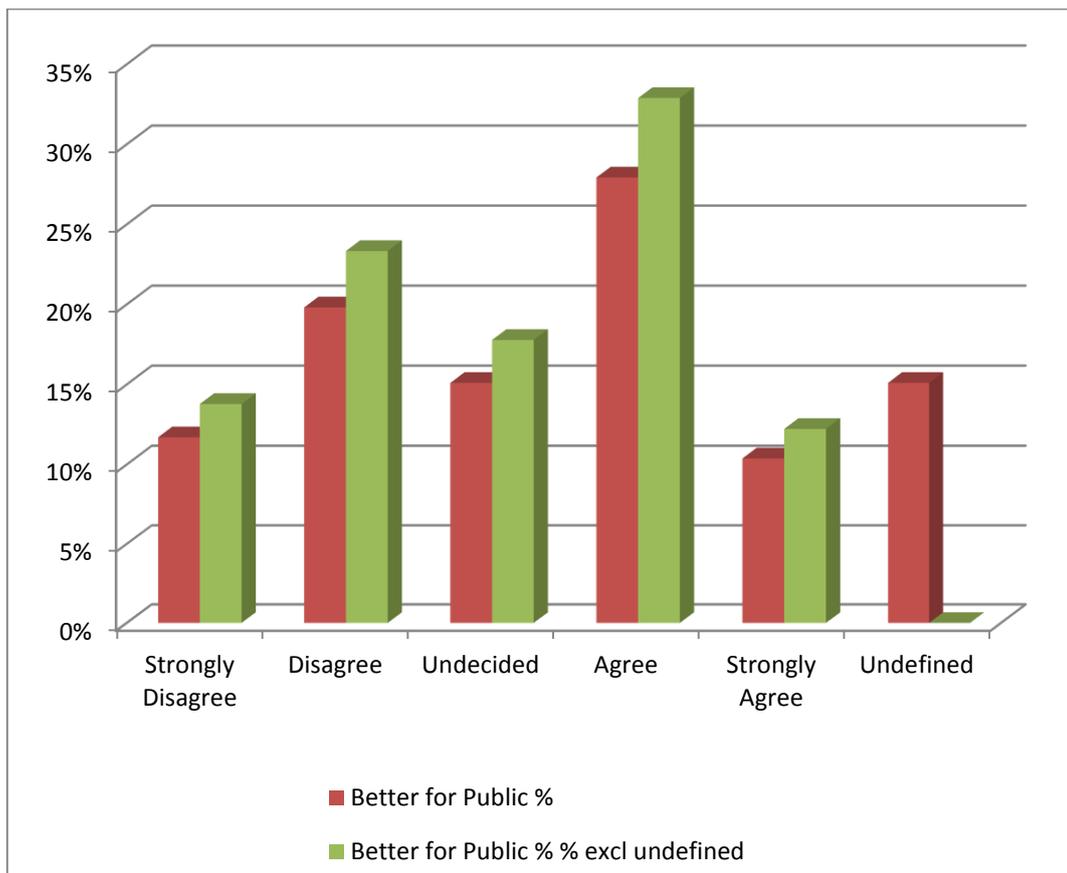


Figure 6.9: Privatization Positive Effect on Public

Question C5- State majority stake

The original question was

5 If electricity is privatized, state should keep the majority share

Giving the following results (Table 6.10 and Figure 6.10)

Table 6.10: State Retains Majority Stake

	State Keep Majority %	State Keep Majority % excl. undefined
Strongly Disagree	4%	4%
Disagree	8%	10%
Undecided	5%	6%
Agree	38%	45%
Strongly Agree	29%	35%
Undefined	16%	0%
	100%	100%

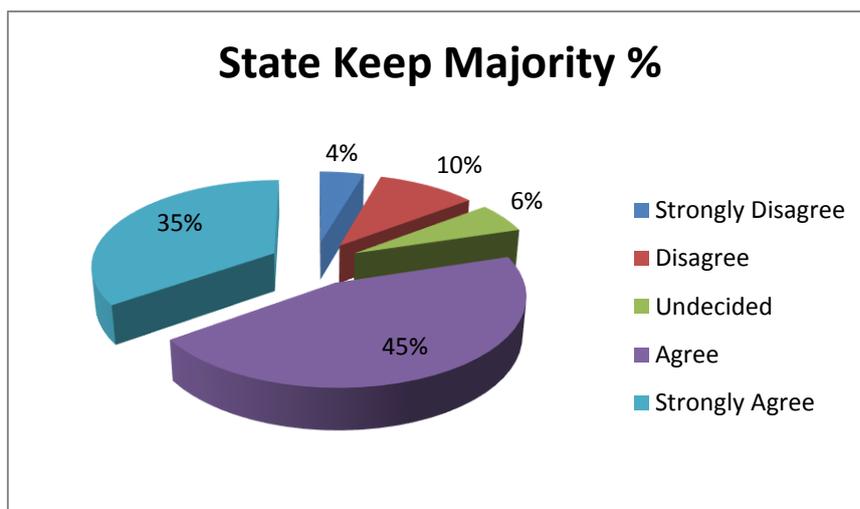


Figure 6.10: State Retains Majority Stake

Question C6- Competition benefits

Being the question

9 Privatization of electricity will lead to increased competition

Answers and presentation below in Table 6.11 and Figure 6.11:

Table 6.11: Privatization Increases Competition

	More competition %	More competition % excl. undefined
Strongly Disagree	9%	11%
Disagree	20%	24%
Undecided	6%	7%
Agree	35%	42%
Strongly Agree	13%	16%
Undefined	17%	0%
	100%	100%

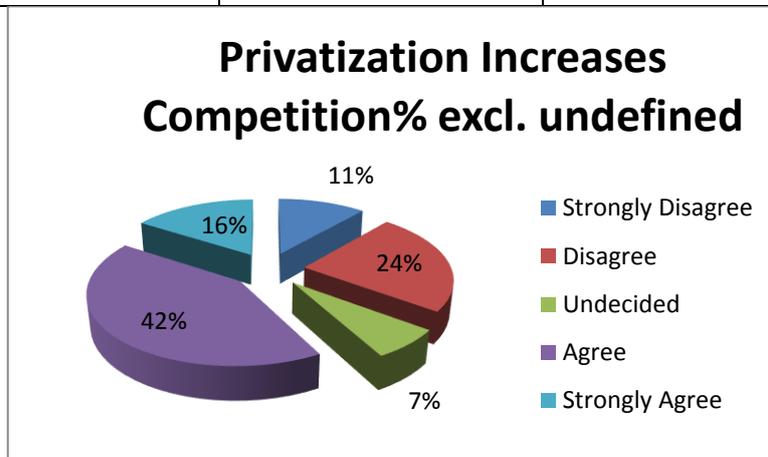


Figure 6.11: Privatization Increases Competition

Model Building or Test of Hypothesis

Descriptive Statistics part represents all summarizing variables showing:

- The Minimum.
- The Maximum.
- The Mean.
- The Standard Deviation.
- Pearson Correlation Coefficient.

As part of the result analysis, a number of validity and reliability tests are performed both for the EAC and Cyprus sample.

First test performed is to examine where the minimum of each summarizing variable is out of range. For example if the value is over the margins of the y-axis. Values less than 1 are not expected for answers obtained in scale 1 to 7 (Service Section B) and for questions with rating in scale 1 to 5 (Privatization Section C).

The second test is to examine whether the maximum of each summarizing variable is out of range. This is the case when we have a maximum with a value over the margins of the x-axis. A scale from 1 to 7 is in effect for questions where answers were obtained (Service Section B). No maximum value—greater than 7 is expected, whilst for questions with rating in scale 1 to 5 (Privatization Section C), no maximum value bigger than 5 is expected.

The third test was to see if the mean is within the range of the scale.

Fourth test is the Standard Deviation test. A check must be performed, to observe whether the Standard Deviation value for each summarizing variable is less than 1. The smaller the value of Standard Deviation is, the more valid the result is.

First, Second and Third test fully pass for both EAC and Cyprus sample. Fourth test is applied for the first five summarizing variables since last three represent individual questions. For EAC sample one variable with a value greater than 1 exists whilst for the Cyprus sample the same appears, with another one being slightly over 1 (1.03).

Comparison of Means

Examining the graph that compares the Means it is observed that there are differences among the samples. It is expected that EAC employees rank higher Section B questions regarding Service and as far as Section C (Privatization) is concerned their answers show their opposition and concerns.

It is important to identify that the factors of Section B and C cannot be compared, because they are represented in different scales. As a first step we compare the Means in a summary form:

Table 6.12: Comparison of Means

Means comparison		
	EAC	Cyprus
Service Mean	5,1803	4,8289
Privatization Perspective	2,3306	2,8159
Privatization better for staff	2,5968	3,1319
Privatization worst working conditions	3,7097	3,5458
Privatization better for consumers	2,6355	3,0709
State should keep majority	4,4516	3,9551
Privatization increases competition	2,2667	3,2727
In favor of an alternative to privatization	3,8387	3,5056

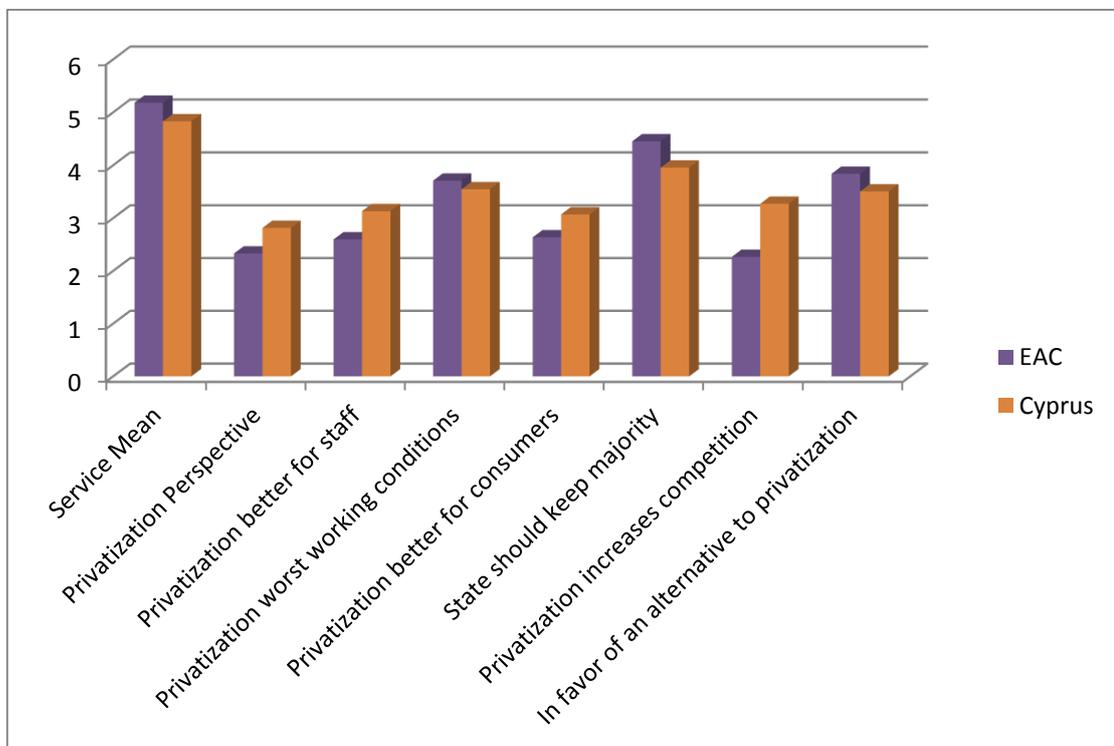


Figure 6.12: Comparison of Means

The following graphical representation (Figure 6.15) shows the means for all questions that have to do with the level of satisfaction for EAC services. All values are above average in a scale 1-7 except the rating of the electricity price which is much below average.

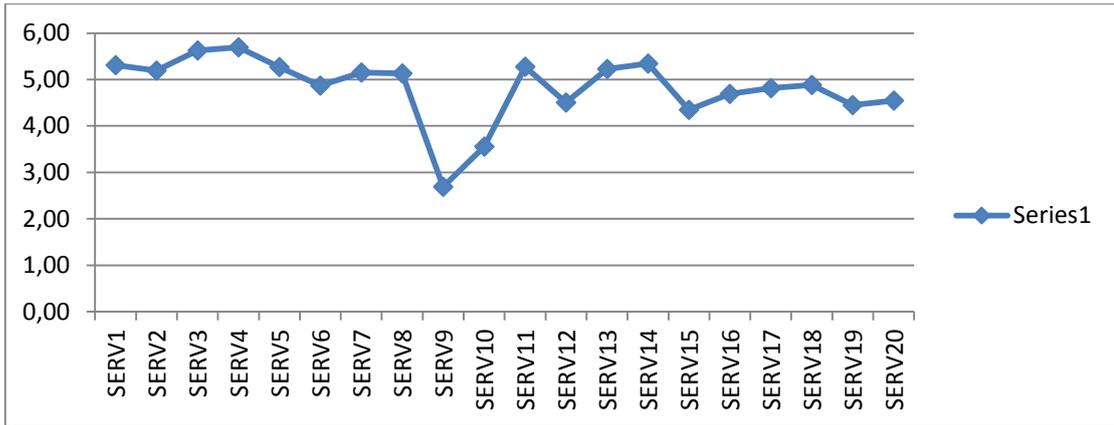


Figure 6.13: Analytical Means for Service Section

Next graph presents the means of participants' views regarding Privatization. All values are above average.

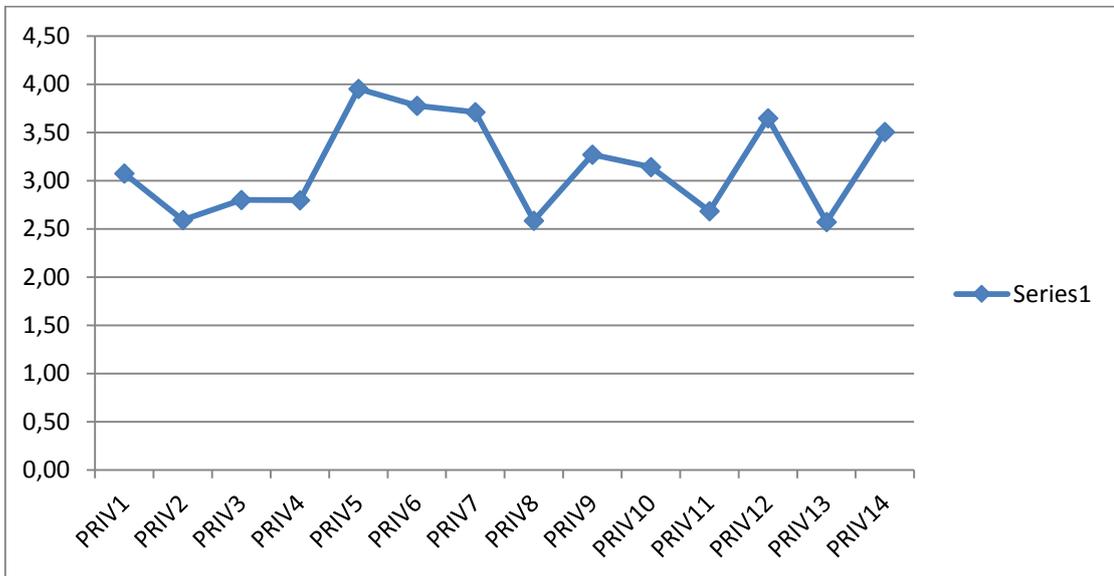


Figure 6.14: Analytical Means for Privatization Section

Then we worked on the Correlation Tables. SPSS indicates where there is a correlation between factors with an asterisk. We transfer the figures obtained in Microsoft Excel (2010) in order to have a graphical representation of them and compare the values.

Interpretation

We use the table below (Table.6.13) initiated by Jacob Cohen, in his well-known book where he suggested, a little ambiguously, that a correlation of 0.5 is strong, 0.3 is moderate, and 0.1 is weak (Cohen, 1988, pp. 79-80). In order to comment on the correlations we must first have a guideline on the results. With the same principle, we have positive and negative results.

Table 6.13: Correlation Interpretation

Correlation r	Interpretation
-0,5 to -1	Negative Strong
-0.3 to -0.5	Negative Moderate
-0.1 to -0.3	Negative Weak
0.1 to 0.3	Positive Weak
0.3 to 0.5	Positive Moderate
0.5 to 1	Positive Strong

If $r = 0$, then the correlation is zero and there is no relationship between the variables. It is obvious that the closest to 0 the smaller the correlation is.

Using the table above, we will test the Hypothesis whether they are supported or not.

Hypothesis

In a statistical analysis, two procedures must be completed. First of all we must make a hypothesis and secondly we must decide on the level of significance (the probability that we reject the hypothesis). In this regard, the following hypotheses were considered.

Null Hypothesis (H₀): This states that the results of EAC sample do not differ significantly from the results of the Cyprus sample.

Hypothesis 1: The level of satisfaction of the EAC sample, regarding procedures and services, will be significantly stronger than the Cyprus sample.

Hypothesis 2: The opinions against privatizations will be the same regarding all utilities.

Hypothesis 3: EAC sample will be keen to an alternative strategy whilst Cyprus sample will not.

Results Comparison

The following results were extracted after the elaboration of the data in Microsoft Excel. The graphs represent the comparison of the correlation between EAC and the overall sample of Cyprus.

The attempt is to test whether the assumed hypotheses are supported by the findings.

Test 1: Null Hypothesis (H0): numbers of EAC sample do not differ significantly from the Cyprus sample.

Table 6.14 and the graph in Figure 6.15 represent the comparison of the correlations for the acceptance for services provided by EAC (using a level of significance of 0,05) and to the view they have on privatization for both the Cyprus and EAC sample.–The correlation level as per Table 6.13 is also shown. The correlation values are extracted from tables Appendices 4 & 5.

Table 6.14: Correlations Analysis

Level of Services	r value	r value	Interpretation	Interpretation
	EAC	CYPRUS	EAC	CYPRUS
Privatization Perspective	-0,21	-0,20	Negative Weak	Negative Weak
Privatization better for staff	0,01	-0,07	NULL	Negative Weak
Privatization worse working conditions	-0,05	0,12	NULL	Positive Weak
Privatization better for consumers	-0,18	-0,15	Negative Weak	Negative Weak
State should keep majority	-0,02	0,12	NULL	Positive Weak
Privatization increases competition	0,07	-0,15	NULL	Negative Weak
Favor of an alternative to privatization	0,35	0,20	Positive Moderate	Positive Weak

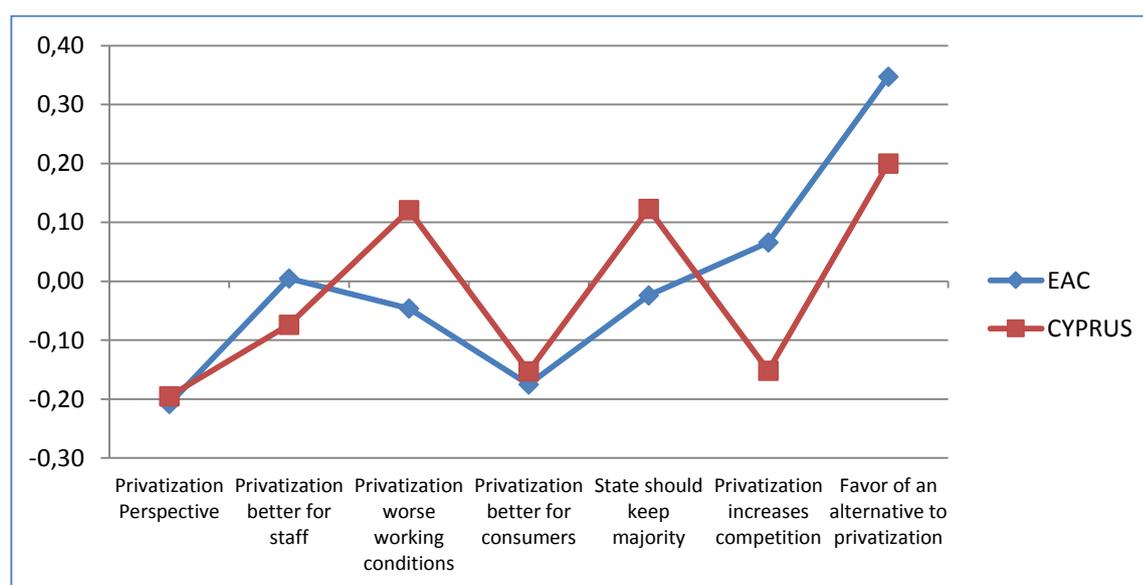


Figure.6.15: Correlations Analysis

It is observed that the means of the EAC sample differ significantly from the mean of the Cyprus sample, in the various questions raised so *Null Hypothesis* (H0) is not proven.

Test 2: Hypothesis 1: The level of satisfaction of EAC sample regarding procedures and services will be significantly stronger than Cyprus sample.

Analytical results regarding Minimum, Maximum, Mean and Standard Deviation both for EAC and Cyprus sample are shown in Tables 6.15 and 6.16.

Table 6.15: Descriptive Statistics EAC Sample

	N	Minimum	Maximum	Mean	Std. Deviation
SERVMEAN	31	3,25	5,95	5,1803	0,63749
PRIV_POS	31	1,00	4,75	2,3306	1,25397
PRIV_BET_FOR_STAFF	31	1,00	4,00	2,5968	0,77910
PRIV_WORSE_FOR_STAFF	31	2,00	5,00	3,7097	0,82884
PRIV_BET_FOR_PUBLIC	31	1,40	4,40	2,6355	0,66661
KEEP_MAJORITY	31	2,00	5,00	4,4516	0,85005
MORE_COMPETITION	30	1,00	5,00	2,2667	1,25762
ALTER_STRATEGY	31	1,00	5,00	3,8387	1,31901
Valid N (listwise)	30				

Table 6.16: Descriptive Statistics Cyprus Sample

	N	Minimum	Maximum	Mean	Std. Deviation
SERVMEAN	94	1	6,6	4,8289	1,03702
PRIV_POS	91	1	5	2,8159	1,19712
PRIV_BET_FOR_STAFF	91	1	5	3,1319	0,88454
PRIV_WORSE_FOR_STAFF	91	1	5	3,5458	0,84986
PRIV_BET_FOR_PUBLIC	91	1	5	3,0709	0,73337
KEEP_MAJORITY	89	1	5	3,9551	1,1069
MORE_COMPETITION	88	1	5	3,2727	1,30188
ALTER_STRATEGY	89	1	5	3,5056	1,24429
Valid N (listwise)	86				

In order to check whether Hypothesis-1 is satisfied, the means for the Service Section must be compared. It is observed that EAC employees rate their services with

an average mark of 5.18 out of 7, but the interesting part is that the rating of the sample as a whole is not significantly lower (4.83 out of 7). Hypothesis 1, therefore, cannot be accepted.

Test 3 Hypothesis 2: The opinions against privatizations will be the same regarding all utilities.

A further analysis was performed so as to investigate further the opinions for each SGO as shown in Table 6.7 below and, therefore, test the whether Hypothesis 2 is supported. These results are shown in the two graphs (Figures 6.7a and 6.7b) with the first one to include ‘undefined’ answers and the second one excluding them.

Table 6.17 Opinions for Privatization by Utility

PRIVITIZATION BY-UTILITY	CYTA	WATER	PORT	ELECTRICITY
Strongly Disagree	12%	23%	17%	21%
Disagree	20%	24%	23%	18%
Undecided	12%	12%	14%	12%
Agree	32%	21%	25%	24%
Strongly Agree	9%	7%	8%	9%
Undefined	14%	14%	14%	16%

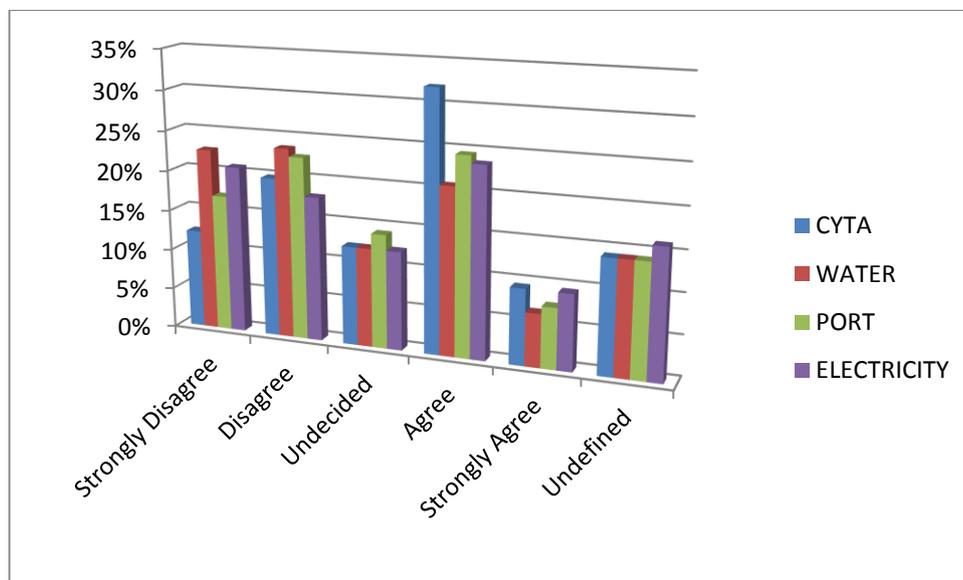


Figure 6.16: Opinions for Privatization by Utility

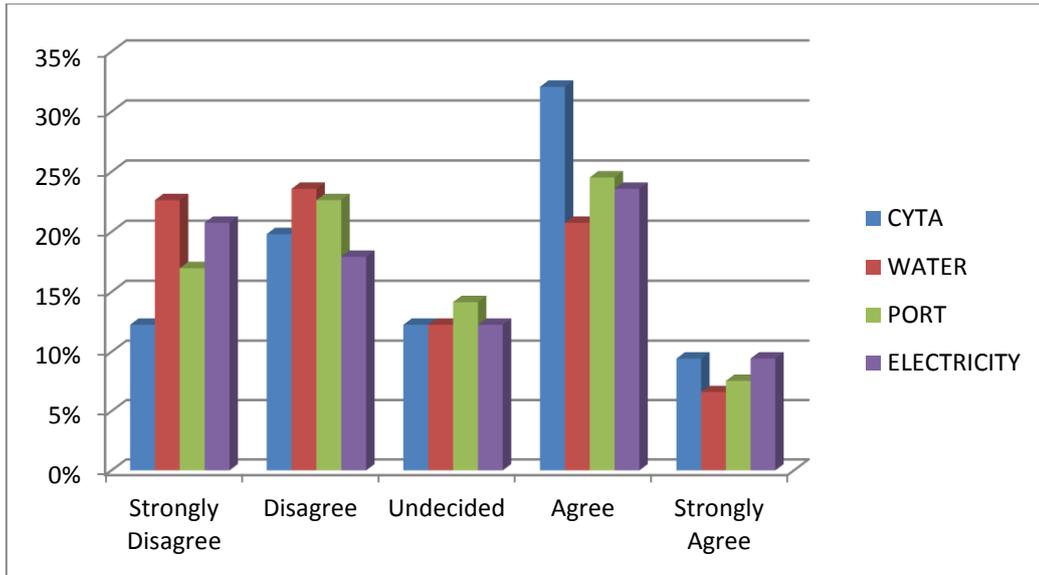


Figure 6.17: Opinions for Privatization by Utility, excluding Undefined

The outcomes that are obtained by the table and graphs show that not all utilities are confronted, in the same way, by participants in the survey. If the responses for CyTA and EAC are compared, considering only the ones that have a clear idea by eliminating ‘Undecided’ and ‘Undefined’ answers, for CyTA 41% are in favor and 32% against, whilst for Electricity 33% agree on privatization and 39% disagree. Therefore, Hypothesis 2 cannot be accepted.

Test 4: Hypothesis 3: EAC sample will be keen to an alternative strategy whilst Cyprus sample will not.

In order to perform this test, a deeper analysis on the one of the questions of the questionnaire is necessary. This question which is a statement we investigated in the current thesis was:

- 14 If there is an alternative strategy, electricity should not be privatized

The answers are presented in Table 6.18 and Figure 6.18:

Table 6.18 Alternative Strategy to be Implemented

	Alternative %	Alternative % excl. undefined
Strongly Disagree	7%	8%
Disagree	12%	15%
Undecided	19%	22%
Agree	25%	29%
Strongly Agree	22%	26%
Undefined	16%	0%
	100%	100%

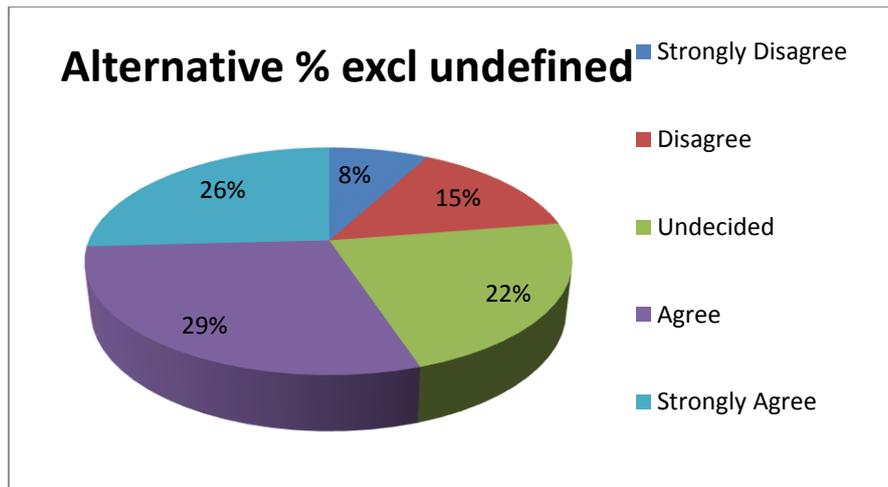


Figure 6.18 Alternative Strategy to be Implemented

As a preliminary statement, this Hypothesis seems to be supported just by observing the results of the means in Table 6.14. An extract of that table will show that the means on that question for the EAC sample are relatively higher than Cyprus sample.

Means	EAC	Cyprus
In favor of an alternative to privatization	3,8387	3,5056

However, this statement can be reconfirmed with a more detailed analysis of the sample. The results are therefore presented by sample in the following Table 6.19 and shown in graphical format in Figure 6.19

Table 6.19 Alternative Strategy by Sample

ALTERNATIVE STRATEGY	EAC	CYPRUS
Strongly Disagree	7%	8%
Disagree	7%	18%
Undecided	17%	25%
Agree	21%	33%
Strongly Agree	48%	15%
	100%	100%

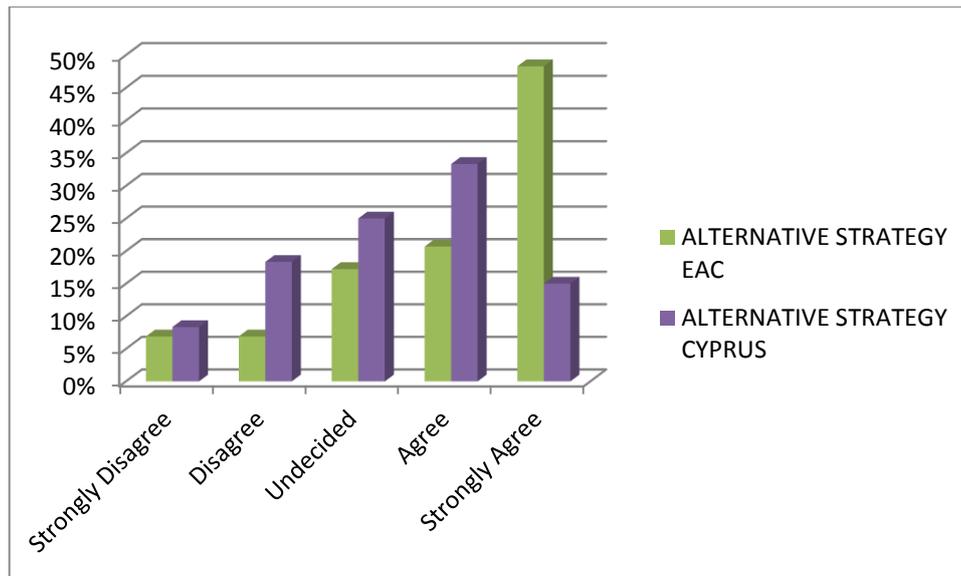


Figure 6.19 Alternative Strategy by Sample

If the positive responses (Agree & Strongly Agree) are compared against the negative ones (Disagree & Strongly Disagree,) it can be observed that both EAC sample and Cyprus sample are in favor of an alternative strategy. EAC employees however are significantly more positive. It is interesting to mention last column on the graph where almost half (exact figure, 48%) of the EAC sample, ‘Strongly Agree’ with an alternative strategy.

Therefore, Hypothesis 3 is proven.

Discussion

The results obtained from this study are imperative and remarkable. First observation is that the behavior of the EAC sample under investigation is not consistent to the Cyprus sample in all individual and group questions.

First observation refers to the demographics. The gender mixture consisted in its majority by males, especially for EAC sample, does not come as a surprise since within the overall organization males are predominant, with more than 85% of the staff of EAC being males. This fact, however, may have an impact on some of the outcomes, especially when comparing with Cyprus sample.

Secondly, almost 50% of the sample is within the age range of 40-49 and more than 95% are within the working age (20-60).

These were two types of demographics that may affect the outcomes. If the behavior of the rest of the demographics was examined in more detail (*i.e.* position), more conclusions would have been reached, but this was beyond the scope of this work.

Four hypotheses were tested within this study.

- *Null Hypothesis (H₀):* This states that the results of EAC sample do not differ significantly from the results of the Cyprus sample. This was not proven by the analysis of the results of the study.
- *Hypothesis 1:* The level of satisfaction of the EAC sample, regarding procedures and services, will be significantly stronger than the Cyprus sample. This hypothesis was also not proven.
- *Hypothesis 2:* The opinions against privatizations will be the same regarding all utilities. This was not proven as well, indicating that each utility must be handled in a different manner regarding the privatization issue.
- *Hypothesis 3:* EAC sample will be keen to an alternative strategy whilst Cyprus sample will not. This hypothesis was proven. However it is interesting to observe that Cyprus sample, even in a less strong manner, have also positive reaction in this alternative issue.

In summary, some of the hypotheses were met for the EAC sample, some for the Cyprus sample and some for both, at least for a number of the variables but not necessarily in the same variables for both samples. Both samples however seem to accept the possibility of an alternative strategy, with the EAC sample to be more positive to this solution.

So, the question–still exists: “*Why does the sample of EAC react in a different manner than the Cyprus sample*”? Possible reasons for this difference in behaviour are:

- EAC staff is working in an organization that is destined to be privatized and they feel fearful about their job and future.
- There has been a lot in the press and media about privatization and the public opinion is influenced negatively about EAC holding it responsible of the high prices of electricity.

Whatever the case may be, it must be taken for granted that the outcomes are valid and conclusions are derived from the figures that we have collected.

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CHAPTER SEVEN: CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Limitations of the Study

A limitation of the current work is the sample size. Even though the sample was enough for EAC staff, it can be considered as relatively small for the Cyprus sample. Moreover, the sample composition shows that responders were mostly between the ages of 40 to 49. Another interesting outcome which can be considered as a limitation of this work is the gender analysis. Most of the participants were male, something that can be justified for the EAC sample where most of the employees are male, but not for Cyprus sample, a showcase that males are more interested in the matter rather than females. Thus, one future research question can be: *“Why are females less interested or pro-active on matters of policy making?”*

The method used for collecting data was a modern, quick and easy to use method. However, this method is common for people familiar with internet and social media, whilst it was not easy for persons who prefer traditional techniques such as hardcopy questionnaires and e-mails or have limited access to a computer or the internet.

Another limitation was the language used. Questionnaires were developed and answers were obtained in English language, which may have been an obstacle especially for the ones not familiar with some terms used. Also, there was no mechanism for clarifications and questions to be asked on the content.

Finally, the period when the research occurred may have affected the results. It was at a time before the new privatization laws were approved by the House of Representatives, and both EAC staff and people in general may have been biased due to politics and the coverage of the subject by the press and the media.

Summary and Conclusion

The aim of this work was to study the issue of privatization, identify the advantages and disadvantages thereof, focus on the international experience. Moreover, a review of the methods of privatization was performed together with an overview of the several valuation approaches. The views of the public and employees of EAC were examined, specifically on the issue of the electricity privatization and the possibility to adopt an alternative approach.

The research included as a primary resource, a structured questionnaire which was prepared and uploaded on web. There were two targeted groups which were approached to participate, EAC employees and randomly chosen consumers. The answers were gathered, processed and made up the basis for further analysis and results. The effort of the primary research was to investigate the reactions of stakeholders on specific aspects with the answers on the following questions:

- How happy they are (employees and consumers) with the current situation in electricity?
- What are their opinions about privatizations in general?
- What are their opinions about electricity in particular?
- What is their opinion if an alternative to privatization method is implemented?

Secondary resources were used for the accomplishment of this research, and these included books, formal journals, videos and documentary films as well as involvement in specialized conferences that were held in the subject of privatization.

According to the findings presented, the main concerns that a government should take into consideration when proceeding with privatization are (but not limited to):

- Public awareness. People must have access to all information about the need for this process, what will be the benefits and what is the cost of it.
- Identification of government goals, how these goals will be achieved and what are the prerequisites for this achievement.
- Decision on the exact type of the privatization process and cost-effectiveness.
- Planning on quality protection and ways to be achieved.
- Preparation of the SOEs and SGOs to be privatized with particular thought on how the personnel will be affected.
- Take into consideration lessons learned from other countries that had similar experience.
- Consideration and handling of political resistance.
- Preparation of the legal and regulatory framework, what needs to be amended and in what way.
- Initiation of a healthy competition that considers and protects the public welfare, the consumers and leads to price reduction.
- Consideration of the risks and hazards related with the implementation.
- Inline the motives of the investors together with the public/ social prosperity.
- Hire experienced consultants to prepare and implement the privatization plan.
- All actions to be done with transparency and fairness.
- Establishing involvement of employees in the process and consideration of the rights and obligations.
- Involvement of all related parties such as Shareholders, Management, Government, Regulators, Trade Unions, Lenders, Investors, Customers, Competitors.

Once the government has the answers and fulfills all the above in the most detailed and analytical manner, the implementation plan may commence or an alternative strategy may be considered.

Two major outcomes were derived from this study, both of them proved not only by primary (research) tools but by the literature as well. First, privatization of public utilities should not be implemented in the same way since each utility has its sensitivities and different approach should be followed. Electricity is one of the sectors that must be handled in this way. Secondly, the results derived from both the primary and the secondary resources proved that privatization, and specifically electricity privatization is not a panacea and furthermore it is not the only way forward. An alternative strategy can be implemented and if such option is decided, the main stakeholders public and employees will support. Even though there are problems with the current structure and framework, it is more acceptable that these deficiencies are corrected instead of selling away public wealth.

This alternative model can incorporate all the advantages and disadvantages of privatization and make the necessary changes to the state, the SOE itself and the mentality of employees and consumers for the benefit of the public and the society.

Suggestions For Further Research

In spite of the fact that the study used both primary and secondary research methods, there are a number of suggestions that need to be considered for future research on this subject.

First of all, the questionnaire was addressed to some of the important stakeholders but not the main one, the owner which is the state. There will be difficulties for such an attempt because of the political system in Cyprus. It is also important to be aware of the opinions of the political parties.

Furthermore, since authors and researchers concluded to conflicting outcomes in some of the topics that were covered, it would have been interesting to investigate in more detail and identify the characteristics and special circumstances of their research.

Finally, we must not forget that Cyprus is an island, electrically isolated from the rest of Europe and when investigating and comparing with other countries they must have the same characteristics.

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APPENDICES

APPENDIX 1 –QUESTIONNAIRE

General Information

1. Gender

- Male
 Female

2. Which category below includes your age?

- 17 or younger
 18-20
 21-29
 30-39
 40-49
 50-59
 60 or older

Other (please specify)

3. Name of the company/organization and the department you work for?

Company

Department

4. What is your position?

- Line Manager
 Supervisor
 Engineer

5. About how long have you been in your current position?

- Less than 1 year
 1-3 years
 3-5 years
 5-10 years
 10-15 years
 15-20 years
 Over 20 years

APPENDIX 1 –QUESTIONNAIRE (continued)

6. What is the number of years you have worked for the company/ organization?

- Less than 1 year
 1-3 years
 3-5 years
 5-10 years
 10-15 years
 15-20 years
 Over 20 years

7. What is the highest level of education you have completed?

Other (please specify)

Main questionnaire

1. How would you rate the following regarding Electricity Authority of Cyprus

	Very unhappy	Unhappy	Somewhat unhappy	Undecided	Somewhat happy	Happy	Very happy
Response to enquiries	<input type="radio"/>						
Processing of enquiries	<input type="radio"/>						
Response in electricity failures	<input type="radio"/>						
Reestablishment of electricity after failure	<input type="radio"/>						
Politeness of staff	<input type="radio"/>						
Mood of the staff	<input type="radio"/>						
Usage of technology	<input type="radio"/>						
Bill repayment options	<input type="radio"/>						
Pricing of electricity	<input type="radio"/>						
Pricing of services	<input type="radio"/>						
Is staff well trained	<input type="radio"/>						
Is staff well supervised	<input type="radio"/>						
Is the service provided professional	<input type="radio"/>						
Quality of service	<input type="radio"/>						
Level of happiness regarding Telephone centre (1800)	<input type="radio"/>						
Working hours	<input type="radio"/>						
Convenience of customer service centers	<input type="radio"/>						
Social Contribution	<input type="radio"/>						
Salaries paid to staff	<input type="radio"/>						
Website of the organization	<input type="radio"/>						

APPENDIX 1 –QUESTIONNAIRE (continued)

Opinions					
1. What is your opinion on the topics below (Level of confidence)					
	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Telecommunications should be privatized	<input type="radio"/>				
Water authorities should be privatized	<input type="radio"/>				
Port authorities should be privatized	<input type="radio"/>				
Electricity should be privatized	<input type="radio"/>				
If electricity is privatized, state should keep the majority share	<input type="radio"/>				
Privitization of electricity will decrease staff salaries	<input type="radio"/>				
Privitization of electricity will lead to lower staff salaries	<input type="radio"/>				
Privitization of electricity will lead to better working conditions	<input type="radio"/>				
Privitization of electricity will lead to increased competition	<input type="radio"/>				
Privitization of electricity will lead to increased unemployment	<input type="radio"/>				
Privitization of electricity will increase state earnings	<input type="radio"/>				
Privitization of electricity will lead to increased productivity	<input type="radio"/>				
A privitized electricity company will care for public more than a state owned	<input type="radio"/>				
If there is an alternative strategy, electricity should not be privatized	<input type="radio"/>				

APPENDIX 4- Correlations Table EAC Sample

		SERVMEAN	PRIV_POS	PRI_V_BET_FOR_STAFF	PRIV_WORSE_FOR_STAFF	PRIV_BET_FOR_PUBLIC	KEEP_MAJORITY	MORE_COMPETITION	ALTER_STRATEGY
	Pearson Correlation	1	-.208	.005	-.046	-.175	.024	.066	.347
SERVMEAN	Sig. (2-tailed)		.262	.978	.808	.347	.896	.730	.056
	N	31	31	31	31	31	31	30	31
PRIV_POS	Pearson Correlation	-.208	1	.440*	-.281	.502**	-.262	.490**	-.808**
	Sig. (2-tailed)			.013	.125	.004	.154	.006	.000
	N	31	31	31	31	31	31	30	31
PRIV_BET_FOR_STAFF	Pearson Correlation	.005	.440*	1	-.540**	.686**	-.395*	.459*	-.260
	Sig. (2-tailed)				.002	.000	.028	.011	.158
	N	31	31	31	31	31	31	30	31
PRIV_WORSE_FOR_STAFF	Pearson Correlation	-.046	-.281	.540**	1	-.343	.003	-.384*	.403*
	Sig. (2-tailed)					.059	.987	.036	.025
	N	31	31	31	31	31	31	30	31
PRIV_BET_FOR_PUBLIC	Pearson Correlation	-.175	.502**	.686**	-.343	1	-.294	.716**	-.365*
	Sig. (2-tailed)						.108	.000	.044
	N	31	31	31	31	31	31	30	31
KEEP_MAJORITY	Pearson Correlation	.024	-.262	.395*	.003	-.294	1	.081	.067
	Sig. (2-tailed)							.671	.720
	N	31	31	31	31	31	31	30	31
MORE_COMPETITION	Pearson Correlation	.066	.490**	.459*	-.384*	.716**	.081	1	-.382*
	Sig. (2-tailed)								.037
	N	30	30	30	30	30	30	30	30
ALTER_STRATEGY	Pearson Correlation	.347	-.808**	-.260	.403*	-.365*	.067	-.382*	1
	Sig. (2-tailed)								
	N	31	31	31	31	31	31	30	31

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

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

a. POPUL='EAC' (FILTER) = Selected

APPENDIX 5- Correlations Table Cyprus Sample

		SERV MEAN	PRI V_POS	PRIV_ BET_FOR_ STAFF	PRIV_ WORSE_F OR_STAFF	PRIV_ BET_FOR_ PUBLIC	KEEP_ MAJORIT Y	MORE _COMPETI TION	ALTE R_STRAT EGY
SERVMEAN	Pearson Correlation	1	-,245*	-,150	,111	-,236*	,180	-,213*	,394**
	Sig. (2-tailed)		,019	,155	,294	,025	,092	,046	,000
	N	94	91	91	91	91	89	88	89
PRIV_POS	Pearson Correlation	-,245*	1	,650**	-,221*	,647**	-,443**	,573**	-,662**
	Sig. (2-tailed)			,000	,035	,000	,000	,000	,000
	N	91	91	91	91	91	89	88	89
PRIV_BET_FOR_STAFF	Pearson Correlation	-,150	,650**	1	-,336**	,763**	-,407**	,683**	-,429**
	Sig. (2-tailed)				,001	,000	,000	,000	,000
	N	91	91	91	91	91	89	88	89
PRIV_WORSE_FOR_STAFF	Pearson Correlation	,111	-,221*	-,336**	1	-,053	,198	-,245*	,322**
	Sig. (2-tailed)			,001		,620	,063	,021	,002
	N	91	91	91	91	91	89	88	89
PRIV_BET_FOR_PUBLIC	Pearson Correlation	-,236*	,647**	,763**	-,053	1	-,296**	,752**	-,419**
	Sig. (2-tailed)			,000	,620		,005	,000	,000
	N	91	91	91	91	91	89	88	89
KEEP_MAJORITY	Pearson Correlation	,180	-,443**	-,407**	,198	-,296**	1	-,247*	,397**
	Sig. (2-tailed)			,000	,063	,005		,021	,000
	N	89	89	89	89	89	89	87	88
MORE_COMPETITION	Pearson Correlation	-,213*	,573**	,683**	-,245*	,752**	-,247*	1	-,420**
	Sig. (2-tailed)			,000	,021	,000	,021		,000
	N	88	88	88	88	88	87	88	87
ALTER_STRATEGY	Pearson Correlation	,394**	-,662**	-,429**	,322**	-,419**	,397**	-,420**	1
	Sig. (2-tailed)			,000	,002	,000	,000	,000	
	N	89	89	89	89	89	88	87	89

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

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