Inefficiency of Power Distribution Companies in Kyrgyzstan and Privatization as Possible Remedy (Rent-Seeking Theory Perspective)

by

SAGYNOV Bektur

written under supervision of Pr. SUZUKI Yasushi

July 2013

Thesis Presented to the Higher Degree Committee

of Ritsumeikan Asia-Pacific University

in Partial Fulfillment of the Requirements for the Degree of

Master of Business Administration (MBA)

Statement of Authenticity

This is to declare that I, SAGYNOV Bektur, am submitting this piece of work, under the supervision of Professor SUZUKI Yasushi, to the Graduate School of Management of Ritsumeikan Asia Pacific University in partial fulfillment of the requirements for a Master's degree in Business Administration. I certify that this research paper is my original work, which has not been submitted anywhere for the purpose of obtaining an academic degree. I also certify that the best effort was made to duly acknowledge all sources of data used.

SAGYNOV Bektur

Signature

July 15th, 2013

Acknowledgements

This research would not have been possible without many people, whose meaningful contribution I must acknowledge.

First, I would like to express my deep gratitude to my supervisor, Professor SUZUKI Yasushi, for the guidance and support provided to me in the process of this research, as well as for arousing an economist in me. Second, I would like to acknowledge the great effort made by the Ritsumeikan APU Graduate School of Management faculty to create competitive and mutually motivating atmosphere for learning. Third, I would like to thank the Government of Japan, as represented by the Japan International Cooperation Center (JICE), for providing me the opportunity to spend two wonderful years in Japan both developing my intellectual potential, and broadening my cultural horizon.

Last, but not at all least important for completion of this research was constant support of my family. I would like to thank my dear Aizhamal, Sardar and Kambar for their love, sacrifice and understanding.

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List of Abbreviations

CIS – the Commonwealth of Independent States

FESTI – Fuel Energy Sector Transparency Initiative

GDP – Gross Domestic Product

HPP – hydropower plant

IMF – the International Monetary Fund

KR – the Kyrgyz Republic

kWh – kilowatt-hour

MW – megawatt

MEIKR – the Ministry of Energy and Industry of the Kyrgyz Republic

NBKR – the National Bank of the Kyrgyz Republic

NGO – non-governmental organization

PDCs – power distribution companies

PPP – Purchasing Power Parity

SOE – state-owned enterprise

SPF – the State Fund for the Management of State Property of the Kyrgyz Republic

TPP – thermal power plant

UNDP – the United Nations Development Program

USAID – the United States Agency for International Development

USD – the United States Dollar

WB – the World Bank Group

WTO – the World Trade Organization

ABSTRACT

Kyrgyzstan's power sector currently faces significant problems posing serious threat not only to its future development outlook, but even to the short term energetic security of the country. Probably the most important of the problems is consistently poor operational and financial performance of the power sector enterprises.

This research was conducted with the aim of acquiring deep understanding of the operations of the Kyrgyzstani power sector and problems, causing the inefficiency of state-owned power sector enterprises. The research further sought to identify the types of rents and rent-seeking activities present in the sector, the role of major stakeholders of the power sector in the creation and distribution of those rents. Using a rent-seeking theory based analytical framework, the author tested the hypothesis that corruption and other rent-seeking activities negatively affect efficiency and profitability the power sector companies. Privatization of the power distribution companies has long been on the agenda of the Kyrgyzstani policymakers as a possibly effective mechanism for addressing the problems of inefficiency and raising investment capital to finance the reconstruction and development of the power distribution network. The second research question sought to clarify the reasons why privatization would have positive impact on performance of the power distribution companies. The analysis needed to answer this question considers the implications that privatization might have on the rents and rent-seeking activities already defined earlier in the text.

This study was conducted using Qualitative Case Study approach, was based on secondary data from journals, books, reports by the World Bank, the IMF, the UNDP, non-governmental expert organizations, legal acts of the Kyrgyz Republic, data on the power sector enterprises' performance provided by the Ministry of Energy and Industry of the Kyrgyz Republic and the author's own observations resulting from his working experience as a Kyrgyzstani policy maker.

The first main finding of the study is that corruption and other rent-seeking activities, deeply embedded in the operations of the Kyrgyzstani power sector, adversely affect operational and financial efficiency of the power sector. The second finding is that privatization is likely to lead to improved efficiency of the power sector via curtailing opportunities and weakening incentives for corrupt behavior in the sector.

SUMMARY

In more than two decades passed after independence from the Soviet Union in 1991 the Kyrgyz Republic has made a substantial progress on its way to transitioning from typical socialistic “planned” economy to “free market”. However, despite the overall high level of economic liberalization in the country, some sectors of the economy have only partially been affected by liberalization reforms. Almost all public utility enterprises in Kyrgyzstan are still under state or municipal ownership, which, probably, is one of the reasons for their poor financial and operational performance.

Power distribution sector is not an exception. State-owned enterprises operating in the power sector demonstrate consistently lackluster performance. This research is aimed at analyzing factors, causing inefficiency of state-owned power distribution companies, with particular focus on the impact of rent-seeking activities inherent in the operations of the power distribution sector in Kyrgyzstan.

The first research objective of this thesis is to identify the character of rent-seeking activities and rents, created and maintained by major groups of the power sector stakeholders like politicians, consumers, professionals of the power sector and suppliers of fuel and equipment.

It has been suggested by many policymakers in Kyrgyzstan that the privatization of power distribution companies, which currently are the main source of the inefficiency in the power sector, is likely to result in improved efficiency of the power sector companies. For this reason, the second research

objective of this thesis aims to assess possible implications that privatization of the power distribution sector might have for efficiency of the power distribution companies. In this study the analysis will focus on the role of privatization reforms in curtailing opportunities for inefficient rent-seeking and corruption in the power sector, which is expected to lead to improved efficiency.

The research is conducted using qualitative case study method and is based upon secondary data from academic journals, books, reports by the World Bank, the IMF, the UNDP, non-governmental expert organizations, legal acts of the Kyrgyz Republic, data on the power sector enterprises' performance, provided by the Ministry of Energy and Industry of the Kyrgyz Republic, and the author's own observations, resulting from his working experience as a Kyrgyzstani policy maker.

The analysis rests upon a rent-seeking theory based analytical framework, which is used to provide definition of rents and rent-seeking activities that are present in the operations of the power sector and to provide assessment of the impact that these rents and rent-seeking activities have for the performance of the power sector SOEs and overall social welfare.

Privatization of SOEs is frequently presented as a solution to the public sector's inefficiency. This thesis will seek to answer the questions "if" and "why" privatization can be effective in becoming a viable solution for addressing the power sector's inefficiency problem. It is done by looking at privatization's impact on the efficiency of Kyrgyzstani power sector through lens of its effect on the inefficient rents.

The first main finding of the study is that corruption and other rent-seeking activities by major interest groups in the power sector, such as politicians, consumers, power sector professionals and suppliers of fuel and equipment have adverse impact on operational and financial efficiency of the power distribution companies. The second main finding is that privatization of the power distribution companies is likely to cause substantial improvement of the power distribution companies' efficiency by weakening influence that politicians have on the power sector enterprises, by curtailing opportunities and weakening managers' incentives for engaging in corrupt activities.

Chapter 1: Research Background

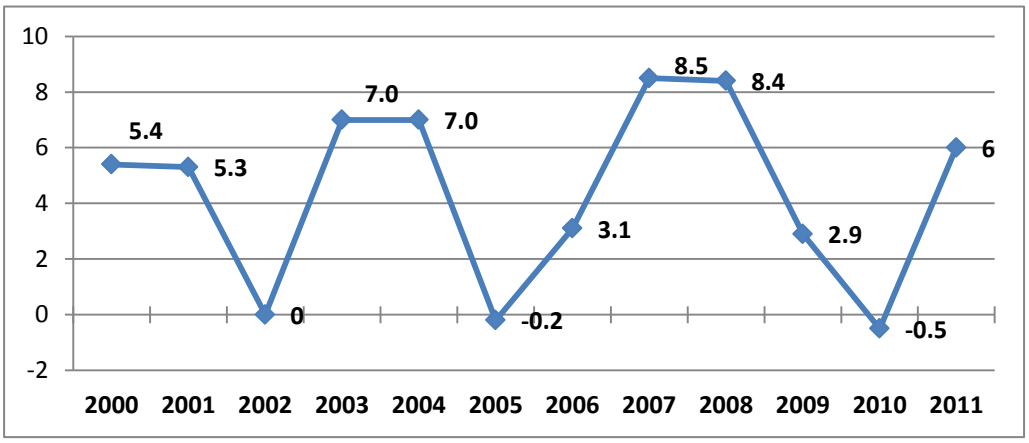
1.1 Background

1.1.1 Economy of Kyrgyzstan

The Kyrgyz Republic (Kyrgyzstan) is a low income country with nominal per capita GDP equaling 1,124 US dollars and PPP per capita GDP equaling 2,200 US dollars in 2011 (World Bank). The nominal GDP of Kyrgyzstan in 2011 equaled 6.2 billion US dollars, while real growth rate of - 6.0 per cent (World Bank). The dynamics of real GDP growth is shown on Figure 1 below. Sharp decline in the economic growth rate in 2005 and 2010 resulting in some contraction of the economy was due to the shock effects of revolutions taking place in respective years.

It is argued that the revolution of the 2010 in Kyrgyzstan was to a large

Figure 1: Real GDP Growth Rate, 2000 – 2011 (%)



Source: World Bank Global Development Indicators

degree caused by sharp rise in electricity and heating energy tariffs introduced in January 2010 amidst widespread concerns about deeply ingrained corruption in the power sector (Slay, 2011). It has to be noted that the tariffs increase was put in force after two years of the so called "energy crisis", caused in part by the natural cyclical droughty season and partially by mismanagement in the power industry. Severe lack of water resources necessitated resorting to rationing electricity and was carried out in the form of scheduled rolling blackouts, which caused significant discomfort for businesses and population, especially in rural areas.

Services sector accounts for the largest share in Kyrgyzstan's economy with almost 52 per cent and largest share of GDP, followed by agriculture – 18 per cent and industry – 17 per cent.

The Kyrgyz Republic is open to international trade and was the first among CIS (Commonwealth of Independent States) countries to enter World Trade Organization (WTO) in 1998. However, this fact failed to create the desired momentum for the development of export oriented sectors of the economy. Imports to the Kyrgyz Republic greatly exceed its exports resulting in substantial trade balance deficit. In 2011 exports totaled 2.3 billion US dollars while imports equaled 3.9 billion US dollars (National Bank of the Kyrgyz Republic, 2011). Kyrgyzstan's main export markets are: Russia, Switzerland, Kazakhstan and Afghanistan. Main export goods are gold, electricity, cotton, wool, meat, tobacco and rare-earth metals. Main categories of import goods brought in from China, Russia and Kazakhstan include oil products, machinery and equipment, chemicals and food products.

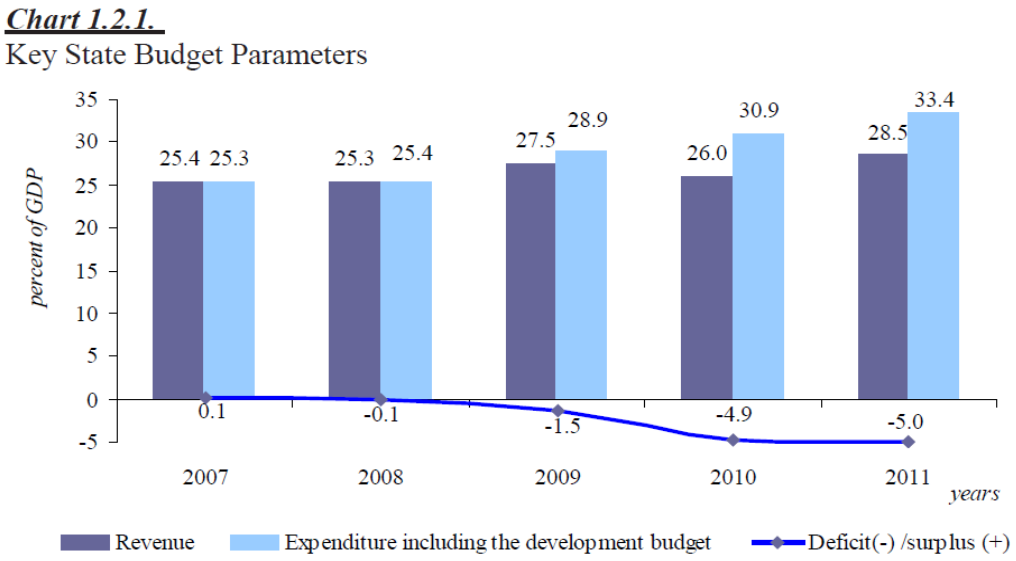
Due to Kyrgyzstan's small size and its openness to international trade, it is vulnerable to diverse external shocks like financial instability in the world's leading economies; economic volatility in main trading partner countries: Russia, Kazakhstan, China, etc.; and price fluctuations on global commodity goods markets (especially food and oil).

Economic conjunctures in Russia and Kazakhstan are very important for Kyrgyzstan also because of the large number of labor migrants from Kyrgyzstan currently working there and regularly sending money to their families back home. It is estimated that about 800,000 Kyrgyzstani or approximately 15 per cent of the country's population work in Russia and Kazakhstan (Tursunov, 2013). Kyrgyzstan, with remittances equaling 29 per cent of GDP in 2011, was the third remittance-dependent country of the world after Tajikistan and Liberia (World Bank, 2013). According to the National Bank of the Kyrgyz Republic data the amount of remittances to the country in 2011 equaled 1,695 million USD, in 2012 – 2,018 million USD (National Bank of the Kyrgyz Republic).

Inflation rate in the Kyrgyz Republic is unstable. In 2011 inflation went up to 16.6 per cent from 7.8 per cent in 2010 and 6.9 per cent in 2009 (Global Finance). The highest inflation rate in Kyrgyzstan in the period from 2000 to 2011 was observed in 2008 – following world commodity price shock it reached 24.5 per cent.

Significant budget deficit has become a norm in Kyrgyzstan. In the period of 2000-2010 the budget deficit averaged approximately 80.7 million USD or 3 per cent of GDP. In 2011 sharp increase in the budget deficit was registered, reaching 232.8 million US dollars. Such drastic increase was mostly due to the post-revolutionary government's decision to significantly boost spending on social sector. In 2011 the budget deficit increased dramatically. Currently for financing

Figure 2: Revenues, Expenditures and Overall Deficit of the State Budget, 2007 - 2011 (as % of GDP)



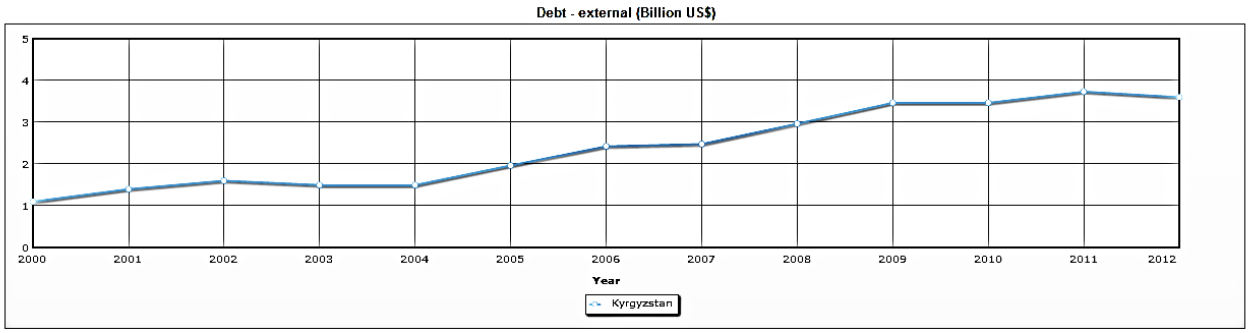
Source: National Bank of the Kyrgyz Republic, Annual Report 2011

the budget deficit the government relies not only on internal, but, to a large degree, also on external sources of financing. The trend lines for revenues, expenditures and deficit of the state budget are reflected on the Figure 2.

Main source of financing the budget deficit is external borrowing. Two decades of following policies of extensively borrowing from external sources such as the IMF, the WB and other international financial organizations and foreign

governments, etc. have created huge public debt, which in 2012 equaled 3.6 billion US dollars. The trend line of Kyrgyzstan's growing external debt as a per cent of GDP is provided on Figure 3 below.

Figure 3: External Debt of the Kyrgyz Republic, in billion USD



Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Kyrgyzstan	1.1	1.4	1.6	1.5	1.5	1.97	2.43	2.48	2.97	3.47	3.47	3.74	3.6

Source: www.indexmundi.com

1.1.2 Power Sector of the Kyrgyz Republic

Power sector plays important role in the economic and social life of Kyrgyzstan. For instance, in 2008 it accounted for 3.9 per cent of GDP, 16 per cent of industrial output and 10 per cent of income to the state budget. Currently 98 per cent of population has access to electricity supply. In terms of per capita electric energy consumption with 1351 kWh per year Kyrgyzstan is falling behind the world average 2343 kWh (Government of the Kyrgyz Republic, 2008).

Kyrgyzstan's power sector structurally consists of 7 companies with state majority ownership: 1 generation company JSC "Electricheskie Stantsii" (the generation company), 1 transmission company JSC "Nacionalnie Electricheskie

Seti Kyrgyzstana" (the transmission company), 4 regional power distribution companies (JSC "Severelectro", "Vostokelectro", "Djalalabatelectro", "Oshelectro") and 1 heating network company. There are several private small scale power plants and small electricity resellers, but their share in the overall energy production and distribution is insignificant.

All of the abovementioned 7 SOEs were previously divisions of single vertically integrated power monopoly "Kyrgyzenergo", which in 2001 was split into 8 companies as part of the Program of denationalization and privatization of the monopolist enterprise. Soon after unbundling one of newly created companies, "Chakan GES", a company comprising of several small hydropower generation plants, was sold to private investors. State ownership in all 7 major companies of the electric power sector, which all have 'open type corporation' status, equals to 93.7 per cent. Yet, the Act of the Kyrgyz Republic "On special status of the cascade of Toktogul hydroelectric power plants and national high-voltage power grid" stipulates that generation nor transmission companies' state-owned stock packages can neither be privatized, used as collateral; nor can the companies be operated under asset management agreement (Jogorku Kenesh of the Kyrgyz Republic, 2002).

Kyrgyzstan has significant hydropower potential and to date only 10 per cent of it has been realized. Existing capacity of power generation is 3,800 MW (megawatt) coming from 16 hydropower plants (3,070 MW) and two thermal power plants (730 MW). Average annual volume of electric energy production equals 15 billion kWh (kilowatt-hours). About 90 per cent share of the total energy production volume is generated by hydropower plants.

Development of the power sector in Kyrgyzstan took place during Soviet times in the second half of the twentieth century, when massive investments were channeled into its technological development and capacity building. According to the Soviet Union's power industry development plan republics of Central Asia (Kazakhstan, Uzbekistan, Kyrgyzstan and Tajikistan) became part of the interdependent electricity system. Since all republics were part of one country, the effort was made to utilize unique characteristics of each country to maximize overall benefit. As a result, most thermal power plants were built in carbon fuel rich Uzbekistan and Kazakhstan. In mountainous Kyrgyzstan and Tajikistan, where most of the region's hydropower potential is concentrated, the priority was reasonably given to the development of hydropower generation. As opposed to thermal plants, HPPs provide possibility of quickly changing their current generation power. Such features enable HPPs to play the role of the power frequency regulators in this system, ensuring stability of the whole energy system during surges in demand for electric energy. Due to such technological interdependence, even after the Soviet Union's collapse, countries of the region, to provide for overall stability, need to maintain parallel operation of their power systems on the basis of intergovernmental agreements.

Although generally dependent on the level of rainfall, domestic demand and water resources available in water reservoirs of major hydropower plants, export of electric power to neighboring countries in recent years accounted for significant share of generation. According to the Ministry of Energy and Industry of the Kyrgyz Republic, in 2011 the volume of electric energy exported by the major generation company equaled 2,620 million kWh, about 18 per cent of total

amount generated, and brought 73 million US dollars of additional revenue for the generation company (Aktalov, 2011). Revenues from export are used to subsidize high costs of operating thermal power plants in Bishkek and Osh, two biggest cities in the country. These power plants, besides generating electric energy, also produce heat energy for central heating of significant parts of the mentioned cities, which makes it very difficult to stop their costly and inefficient operations. High costs and inefficiency are caused by high price of fuel (coal and fuel oil) and high level of technical wear, which according to information of the National Statistics Committee equaled 62.5 per cent for Osh TPP and around 50 per cent for Bishkek TPP (Hasanov, et al., 2011)

As was stated earlier the overwhelming 90 per cent share of electric power generation in Kyrgyzstan's power sector comes from hydropower plants, which have great cost advantage in comparison with TPPs. However, hydropower generation has limitations of its own. Amount of water resources available for power generation depends to great extent on specific climatic conditions of current and preceding periods. Thus, in years with low precipitation level overall generation potential of HPPs can significantly decline, requiring careful management of production activities and even some rationing of power supply. In years 2008 - 2010 Kyrgyzstan experienced the so-called "energy crisis" when severe shortage of water resources available for generation required significant rationing of power supply to most categories of users. In 2008 power distribution companies, facing the necessity of limiting power supply for more than 30 per cent, practiced the so-called 'rolling' blackouts in the form of sanctioned temporary disruptions in power supply for up to 10 hours in some regions.

Situation was especially severe in winter when, as a result of cold temperatures and rising demand for heating, electricity blackouts increased abruptly also as a result of equipment breakdown. This created significant hardships for many households, who could not afford or did not have access to more expensive alternative types of fuel like coal and natural gas (Hasanov & Izmailov, Chapter 3: Kyrgyzstan's Power Sector, 2011).

State Monitoring of the Power Sector

The Government regulates and controls the power sector via the Ministry of Energy and Industry of the Kyrgyz Republic (MEIKR), with subordinate to it State Department for Regulating the Fuel and Energy Sector formally acting as "Regulator"; and the State Fund for the Management of the State Property (SPF).

The SPF functions as owner and manager of the public power sector companies. It is responsible for design and implementation of development strategies (including those related to issues of denationalization and privatization), selecting the companies' management, etc. (Slay, 2011). Currently the SPF is the holder of 80.49 per cent stakes in all 7 major corporations of the power sector. Remaining shares of the companies' stocks are held by the Social Fund of the Kyrgyz Republic – 13.6 per cent, individual stockholders – 2.32 per cent and legal entities – 4,035 per cent.

The MEIKR is responsible for design and implementation of power sector development policies, strategic planning, and assessment and forecasting. The "Regulator's" functions include issuing licenses to power sector companies and setting tariffs, which requires efforts to simultaneously balance the interests of

energy producers and consumers (Slay, 2011). For diagram, illustrating the power sector governance structure in greater details, please see Appendix 1.

Many experts express the opinion questioning the soundness of current division of state oversight functions in the power sector (Hasanov, et al., 2011; Abdyrasulova & Kravsov, 2009). Indeed, it makes little sense that while MEIKR bears the responsibility for providing sound performance of the power industry and overall energetic security, it is the SPF, which is expected to be less knowledgeable about many specific aspects of power enterprises' operations by default, makes important decisions related to appointment and suspension of the companies' board members.

1.1.3 Reforms and Privatization Experience in the Power Sector

Economic liberalization and public sector privatization reforms in Kyrgyzstan began soon after independence. The first two-year privatization and denationalization program was adopted in January 1992 with the objective of privatizing 35 per cent of the state-owned assets (Jermakowicz & Pankow, 1994). In the first two-year privatization program priority was given to privatizing services and trade sector followed by industry and agriculture (Jermakowicz & Pankow, 1994). The implementation of the first privatization program was considered as successful with 33.15 per cent of public assets or 4,428 firms privatized at the end of the two-year period. As expected most rapid privatization was achieved in area of "small scale" privatization in the trade and services sectors. By 1992 and 1993 privatization had covered 97.2 per cent of small companies in retail trade and food processing, 86.7 per cent of companies in

catering, and all service companies (Privatization in Kyrgyzstan: Country Fact Sheet). At the same time, some sectors of the economy initially excluded from privatization and still under public ownership are utilities, railways and certain mining enterprises (Jermakowicz & Pankow, 1994).

Mass privatization of medium- and large-scale enterprises in industry, transport, and construction sectors was started in 1994 mainly by means of coupon privatization (Privatization in Kyrgyzstan: Country Fact Sheet). By the end of 1997 private sector accounted for 65 per cent of GDP, the highest among all CIS countries (Privatization in Kyrgyzstan: Country Fact Sheet). The third stage called for privatization large monopolies, including national telecom operator "Kyrgyztelekom", power generator and transmission monopoly "Kyrgyzenergo", national airline "Kyrgyzstan Aba Zholdoru", etc. (Privatization in Kyrgyzstan: Country Fact Sheet). Importantly, it should be noted that privatization reforms in late 1990s were supported by the World Bank's Consolidated Structural Adjustment Credit.

In the power sector liberalization process began only in 1997, when government adopted a program of demonopolization and partial privatization of the power sector (Hasanov & Izmailov, Chapter 3: Kyrgyzstan's Power Sector, 2011). Initially implementation of the program was divided into four stages with realization planned for 1997-1999. Three of these four stages have already been fulfilled. First, "Kyrgyzenergo" was corporatized with 94 per cent of stocks left under the state control. Second, control over the company's auxiliary enterprises and socially oriented subdivisions was transferred to local governments (Hasanov & Izmailov, Chapter 3: Kyrgyzstan's Power Sector, 2011).

The third stage of the reform was carried out in 2001 in the form of unbundling of the vertically integrated monopolist “Kyrgyzenergo” into separate independent companies, formed on the basis of their functional characteristics (Hasanov & Izmailov, Chapter 3: Kyrgyzstan's Power Sector, 2011). This division was carried out with the goals of improving performance of the power sector companies by creating conditions for the development of competitive environment; attracting both domestic and foreign investments into the power sector; establishing more effective strategic planning activities, more effective management of the power sector enterprises (Abdyrasulova & Kravsov, 2009). Although this functional restructuring has resulted in creating a more transparent approach for tracking costs on each functional stage and calculation of tariffs, it failed to achieve the expected improvement of economic performance of the energy system (Abdyrasulova & Kravsov, 2009). Moreover, financial condition of the power sector deteriorated along with the reliability of power supply. It can be explained by incomplete conduct of the restructuring, lack of effective market mechanisms like competition and appropriate legal framework (Abdyrasulova & Kravsov, 2009).

In 2008 the former President of the Kyrgyz Republic, Kurmanbek Bakiev, started pushing for invigoration of electricity distribution companies’ privatization, arguing that it was needed because the State proved to be the most ineffective owner (Yuldasheva, 2008). He pointed out that it was necessary to accelerate privatization process, because as long as the state retains control it will be impossible to stop theft, embezzlement and SOE’s borrowings from the budget (Yuldasheva, 2008).

In May 2008 the Government adopted the National Energy Program of the Kyrgyz Republic for 2008-2010 and the Development of the Fuel Energy Complex to 2025. This program approved privatization of distribution companies, which was the main goal of the fourth stage the denationalization and privatization program, as one of the main components of policy for the period of 2008-2010 (The Government of the Kyrgyz Republic, 2008).

These plans of the ruling elites related to privatization of power sector enterprises quickly started to materialize. In late 2008 after assessment of the value of assets tenders to privatize the state-owned stock packages of several distribution companies was announced. Some of them were bundled together with Bishkek Combined Heat and Power Plant and Bishkek centralized heating network company.

Table 1 summarizes chronology of energy companies' privatization taking place in late 2009.

Decision to privatize these companies aroused negative reaction in the society, due to the perceived high level of corruption in the energy sector and lack of transparency and integrity in tendering procedures in Kyrgyzstan, which ranked 164th from 178 countries in the Transparency International's Corruption Perception Index 2010 (Transparency International). As can be seen from the Table 1 initial tenders with preset initial minimum bidding price ostensibly failed due to the absence of interested bidders. Third attempt to hold privatization tenders was conducted without setting the minimum starting price and became scandalous as distribution companies were sold for amounts, which were miniscule compared to estimates by various experts.

The results of these tenders were controversial, to say the least. JSC "Severelectro", whose assets in bundle with the Bishkek Heat and Power Plant and Bishkek central heating company, were evaluated to be worth 137 to 613

Table 1: Energy Sector Privatization Chronology

Box 2—Energy sector privatization chronology[11]	
Company	**Privatization process**
Severelektro Power Distribution Company	** A single tender for the privatization of the state-owned stakes in Severelectro, the Bishkek Combined Heat and Power Plant, and the Bishkek District Heating Distribution Company was initiated in late 2008, with a starting price of $137 million. The tender was voided due to a lack of bids by the January 2009 deadline.* ** A second attempt to sell Severelectro separately was voided in July 2009, for the same reason.* ** A third attempt, without establishing a starting price, succeeded in December 2009, with the Chakan GES generating company announced the winner. Terms of sale included up-front payment of $3 million and capital investments of some $70 million over 10 years. Reportedly, no performance conditions were included in the tendering documents.* ** Following allegations of corruption and mismanagement and the events of April 2010, the government nationalized Chakan GES.*
Vostokelektro Power Distribution Company	** Two privatization attempts were declared void for lack of bids. The starting price was set at $41 million.* ** The third attempt, without establishing a starting price, succeeded in February 2010 with the same Chakan GES announced the winner. The terms of sale included payment of about $1.2 million and investments of $30 million over 10 years.* ** Following allegations of corruption and mismanagement and the events of April 2010, the government nationalized Chakan GES.*
Oshelektro Power Distribution Company	** Two attempts of privatization were voided due to lack of bids. The initial starting price was set at $42 million.*
Jalalabadelektro Power Distribution Company	*Two attempts of privatization were voided due to lack of bids. The initial starting price was set at $27 million.*
Bishkek Combined Heat and Power Plant, and the Bishkek District Heating Distribution Company	** A single tender for the privatization of the state-owned stakes in Severelectro, the Bishkek Combined Heat and Power Plant, and the Bishkek District Heating Distribution Company was initiated in late 2008, with a starting price of $137 million.* ** The tender was voided due to a lack of bids by the January 2009 deadline.* ** No further attempts have been made.*

Source: Energy and Communal Services in Kyrgyzstan and Tajikistan: A Poverty and Social Impact Assessment, Slay B. 2011

million USD, was sold to local company for 3 million USD (Abdyrasulova & Kravsov, 2009; Hasanov & Izmailov, 2011). JSC "Vostokelektro" similarly was sold for 1.2 million USD to the same buyer. The local acquirer company was reportedly founded only a few years ago and thus was unable to present credible

evidence of its ability to successfully manage electricity utility companies (Suhir, 2010). Moreover, the winning company was allegedly controlled by members of the President Bakiev's family and his immediate environment, which only strengthened the public opinion that increasingly larger share of the nation's wealth was being consolidated in the hands of the ruling elite to the detriment of the public (Suhir, 2010).

Another vivid example of questionable privatization in Kyrgyzstan is privatization of JSC "KyrgyzTelecom", monopolistic state-owned fixed telephone service provider. According to Suhir (2010), its divestiture for 40 million USD coupled with immediate simultaneous tariff raise delivered a powerful blow to the credibility of privatization process. JSC "Kyrgyztelecom" was sold to a newly established consortium of a local Kyrgyzstani company, two off-shore companies and one Kazakhstani company, which won bidding competition against large telecommunications giants like Russia's RosTelecom and Turkey's TurkTelekom (Suhir, 2010).

The case of JSC "KyrgyzTelecom" was very similar to the case of the two privatized power distribution companies, "Severelectro" and "Vostokelectro", when tariffs were significantly raised for all categories of consumers soon after the privatization was completed. For households tariffs were more than doubled.

It has been mentioned that significant utility tariff raises and controversial privatization in the context of worsening quality of life and rising poverty were among the primary reasons leading to revolution of April 2010. Therefore, in order to stabilize the situation, one of the first decisions of the interim post-revolutionary government was to revert the tariffs for households to the original

level, at the same time, tariffs for other categories of consumers were somewhat reduced but were not reverted to the original level. There are opinions that the decision to revert tariffs for households was just a populist decision necessary for stabilizing the situation during the turmoil after the revolution. However, keeping current level of tariffs is a short-sighted policy, which will bring about further deterioration of the power infrastructure.

After the revolution the interim Government nationalized all SOEs privatized in dubious manner, including those discussed in earlier in this section, as well as other property, acquired by the former President's family members and people in his environment.

Taking into account the widespread public discontent caused by privatization of SOE's under Bakiev, it is not surprising that the new government preferred following policies, which emphasized strengthening state control over power sector enterprises with the objective of improving management practices and curtailing corruption (Hasanov & Izmailov, Chapter 3: Kyrgyzstan's Power Sector, 2011). It is argued that this effectively means the suspension of market reforms in the energy sector after the revolution (Hasanov & Izmailov, Chapter 3: Kyrgyzstan's Power Sector, 2011). Taking into account that decisions to revert the tariffs and to nationalize recently privatized enterprises were among the most important ones made after the revolution, it will be difficult for the new government to come up with privatization and tariff raise initiatives in the short term.

The post-revolution time interim President, Rosa Otunbaeva, signed a Decree stipulating for the introduction of transparency and public accountability

principles into operations of the power sector. In pursuance of the Decree, in the fall of 2010 Supervisory Board on Fuel and Energy Sector Transparency Initiative (FESTI) was created. The Board is a supervisory and advisory body under the Ministry of Energy of Kyrgyz Republic, consisting of representatives of government agencies, NGOs and enterprises of fuel and energy complex enterprises (FESTI).

Under current legal provisions privatization of PDCs is still possible, although after April 2010 the focus was on improving state control, which should result in better management and decrease in the scale of corruption (Hasanov & Izmailov, Chapter 3: Kyrgyzstan's Power Sector, 2011). It has to be noted that after the revolution of 2010 significant changes were introduced into privatization procedures. Privatization auctions and tenders can no longer be conducted without setting a fixed minimum bidding price (The Government of the Kyrgyz Republic, 2012). With regard to the privatization process the emphasis nowadays is put on principles of transparency and accountability before the Parliament (Jogorku Kenesh of KR) and society. In the realization of these principles, the composition of privatization commission was changed and must include members of the Parliament, representatives of NGOs, law-enforcement agencies and other supervisory bodies (The Government of the Kyrgyz Republic, 2012).

Privatization of electricity distribution companies initially was planned in the form of divestiture to large strategic investors with proven record of successfully operating electric utility businesses. Experts argue that even after the revolution privatization of PDCs is possible if carried out in accordance with the law and principles of transparency and accountability (Hasanov & Izmailov, Chapter 3:

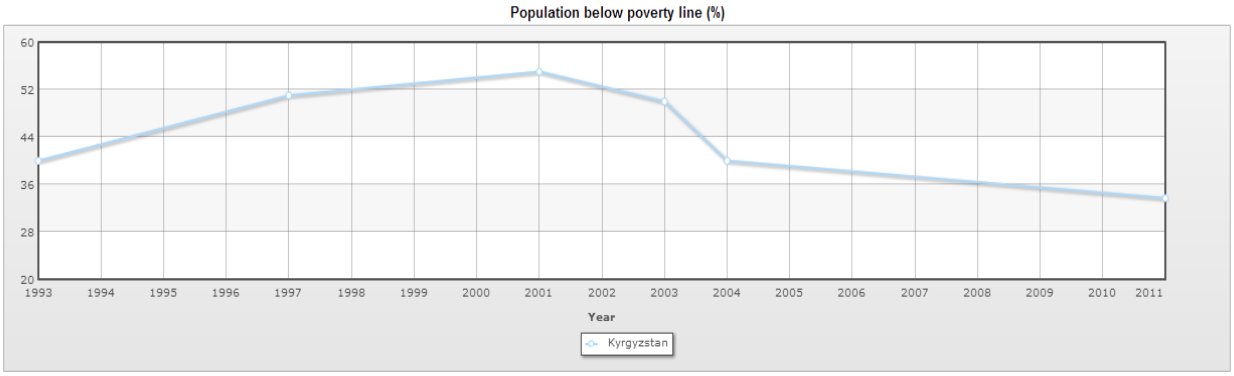
Kyrgyzstan's Power Sector, 2011). In this case, privatization could bring capital and know-how necessary for modernizing electricity infrastructure, reducing losses, finally resulting in higher efficiency and better financial performance (Hasanov & Izmailov, Chapter 3: Kyrgyzstan's Power Sector, 2011).

1.1.4 Social Importance of Electricity Services in the Kyrgyz Republic

Access to electric energy is very important for both economic and social development. Currently 98 per cent of population in Kyrgyzstan has access to electricity supply services, with the exception of several dozens of small villages located in remote and mountainous areas (Abdyrasulova & Kravsov, 2009). Despite the widespread use of electricity services, in terms of per capita electric energy consumption with 1,351 kWh per year Kyrgyzstan lags behind the world average of 2,343 kWh.

According to Winkler et al. (2011) providing affordable access to reliable and modern energy services is a very important objective in many developing countries. “Affordable” is a very relevant term for Kyrgyzstan, where still a large share of population lives beyond poverty line. In 2011 about 33.7 per cent of population lived beyond the poverty line (www.indexmundi.com). Therefore, access to reasonably priced commodities is vital for the provision of minimally acceptable living standards for the poor. Figure 4 illustrates the percentage of population living beyond poverty line trend in Kyrgyzstan for the period of 1993 – 2011.

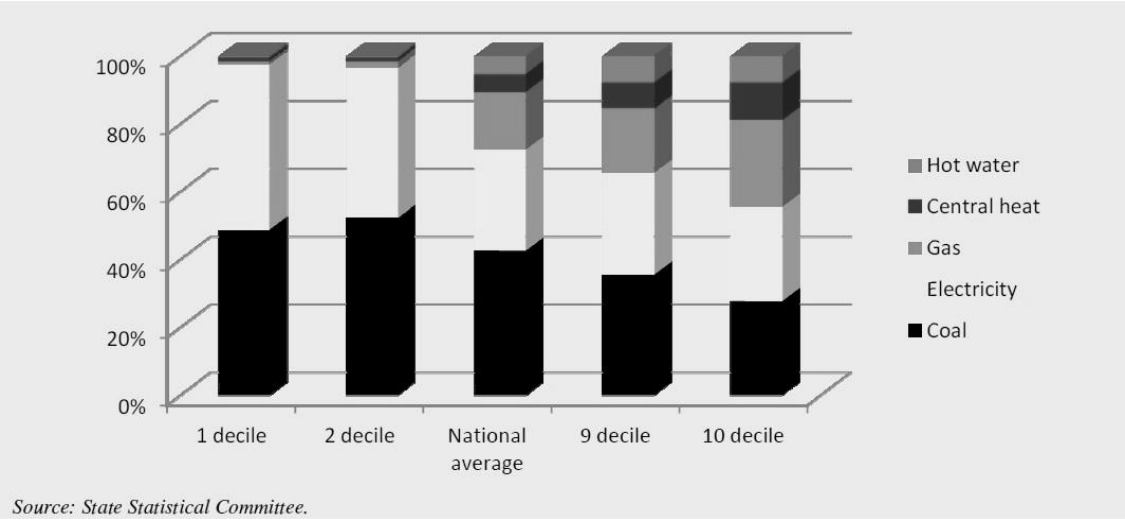
Figure 4: Population below Poverty Line (%)



Source: www.indexmundi.com

Country	1993	1997	2001	2003	2004	2011
Kyrgyzstan	40	51	55	50	40	33.7

Figure 5: Share of Households' Spending on Different Types of Energy (2009)



Source: Energy and Communal Services in Kyrgyzstan and Tajikistan: A Poverty and Social Impact Assessment, Slay B. 2011

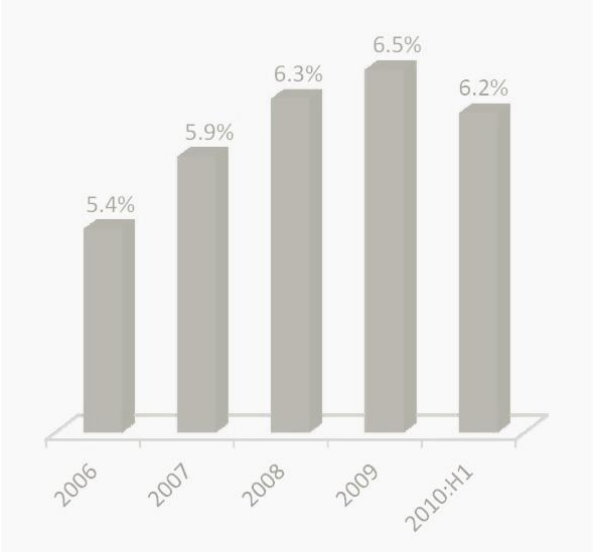
In 2011 United Nations Development Program sponsored a poverty and social impact assessment of current policy and reform trends in the energy and communal services sectors in Kyrgyzstan (Slay, 2011). As has already been mentioned, reliability of electricity supply in Kyrgyzstan leaves much to be

desired, and according to the UNDP report in 2008 weekly interruptions of electricity services were reported by 72 per cent of households in the country as a whole 78 per cent for rural areas (Slay, 2011). Percentage of the poor living in rural areas in Kyrgyzstan noticeably exceeds that for urban areas. In 2008 overall poverty rate in the capital city Bishkek equaled 15.2 per cent, while in most of the other regions it exceeded 40 per cent (Slay, 2011). During winter seasons households living in rural areas for heating rely mostly on coal and electricity; while in urban areas, due to the higher level of infrastructure development and higher income level, consumers have wider choice of energy sources to rely on (Slay, 2011). These include services of central heating, gas and hot water supply. Therefore, from the previous two sentences it is possible to draw a conclusion that the poorest households are those who suffer from interruptions in electricity supply the most (Slay, 2011).

Social policy in Kyrgyzstan is conducted ineffectively. One of the most evident indications of failure to provide effective social aid is the fact that the country's poor citizens get only about half of the benefits allocated by the state (Slay, 2011). According to official data the share of low-income households in the pool of benefit recipients in 2008-2010 even dropped down from 52 per cent to 50 per cent, while share of upper-income households increased from 6 to 13 percent (Slay, 2011). Thus, significant portion of the increased social spending aimed at mitigating the impact of the crisis developments of 2009-2010 seems to have benefited relatively wealthy households. See Appendix 2 for illustration on the distribution of social benefits among different classes of population in Kyrgyzstan.

According to Winkler et al. (2011) affordability of energy is commonly judged on the basis of calculating energy expenditure burden for households as a share of disposable income. Earlier it was emphasized that the drastic increase of the energy tariffs in January 2010 was one of the key reasons leading to the

Figure 6: Share of Households' Spending Devoted to Energy (2009)



Source: Energy and Communal Services in Kyrgyzstan and Tajikistan: A Poverty and Social Impact Assessment, Slay B. 2011

revolution of 2010. However, official household survey data suggests that the percentage of spending on energy in the total consumption volume in Kyrgyzstan is low by international standards (Slay, 2011). Figure 6 illustrates the trend of the change in households' spending on energy for the period from 2006 to the second half of 2010.

Slay (2011) argues that surprisingly in Kyrgyzstan even poorest citizens pay tariffs that are far below affordable levels, because national average spending on energy accounts for only about 6 per cent of the total spending, while international

benchmarks used by WB, UN and others vary in the range of 15-20 per cent. And in Kyrgyzstan even for the poorest tier of households the percentage of spending on energy did not exceed 10 per cent, which testifies to the relative affordability of electricity for all social classes (Slay, 2011). Use of 10 per cent as a threshold is widely accepted as an indicator for judging on negligibility of spending on energy (Winkler et al, 2011).

In 2008 USAID conducted a study similar to the abovementioned one carried out by UNDP. The study draws attention to the fact that use of electricity for heating purposes has dramatically increased since 2004-2005 levels (Slay, 2011). Another finding of the study was that electricity for heating and cooking is mostly used by urban poor and extremely poor segments of population, which do not have access to other sources of energy such as central heating and gas (Slay, 2011). This can be interpreted as an indication of the "inferior good" characteristic of electricity in Kyrgyzstan, meaning the high level of reliance on it by the poorest people living in both urban and rural areas (Slay, 2011). When it comes to the possible means of mitigating of the impact that higher tariffs might have on low-income households, Slay (2011) argues that "block" or "lifeline" [1] electricity tariffs could prove effective. Tallapragada et al. (2009) also maintain that tariffs increasing steeply with increase in consumption are effective from affordability perspective as they provide affordable access to poorest layers of population and enables subsidization of their tariff by more affluent people, whose level of consumption would fall into higher-tariff zone.

[1] "Block" tariffs are those, in which the charge is based on different kWh rates applying to successive kWh blocks of given size, supplied during a specified period;
"lifeline" electricity tariffs rise with greater amounts of electricity consumption

1.2 Statement of the Problem

Electric power plays immensely important role in the economic and social life of Kyrgyzstan. It has become one of the basic utilities like water supply, with constant access to it defining the minimum acceptable living standards in modern technology-based world. Therefore, every government should consider providing people with access to affordable and quality electricity supply services as one of its basic responsibilities.

Power sector enterprises' operational and financial inefficiency, as well as the capital equipment's wear and tear pose significant threat for overall energetic security in Kyrgyzstan. Poor technical condition of electricity distribution networks and excessive demand result in low voltage and large number of emergency outages, which is an indication of low quality and unreliability of service.

Low socially oriented tariffs, high system losses, inability of power distribution companies to collect payments for supplied electricity are often named as reasons for energy companies' lackluster performance.

However, many experts argue that another important factor, contributing to meager financial and operational performance, is rent-seeking activities such as corruption, bribery and other illicit activities deeply entrenched in the power sector. Public ownership of the power sector SOEs has been frequently mentioned as the key reason for high inefficiency and corruption within the sector.

1.3 Research Objectives

The research was conducted in order to achieve deep understanding of factors, causing the inefficiency of power sector enterprises.

Especially important was to define types of rent-seeking activities and rents inherent in the operations of the power sector and to analyze what implications they might have for efficiency of power sector SOEs.

It is also important to research reasons why privatization of electric energy distribution companies, which for a long time was presented as a possible remedy for the companies' efficiency problems, is likely to cause contraction of corruption and other inefficient rent-seeking activities in the power sector, thus bringing about improvement in performance.

1.4 Significance of Research

There are numerous studies and reports, discussing the issues of power sector enterprises' inefficiency in the Kyrgyz Republic, which are available to the public. However, the author has not come across any that looked at those issues through prism of the rent-seeking theory. This thesis is expected to contribute to the knowledge body, dedicated to analyzing operations of the Kyrgyzstani power sector, and trying to define major factors causing the inefficiency, with particular emphasis on the role of corruption and patronage.

Also this study seeks to investigate theoretical basis and empirical results of privatization reforms in other developing and transition countries of the world. This is done to make a forecast of possible effects that privatization might have on performance of the power sector enterprises.

This research can prove useful for people conducting research related to assessing performance of electric utilities, implications of rent-seeking activities and corruption on efficiency of SOEs in developing countries, problems of economic transition in countries of Central Asia, etc.

Findings of this study, taking into account the author's direct involvement in the Kyrgyzstani power sector as a policy maker, can potentially be reflected in future public policies, regulating operations of the power sector in Kyrgyzstan.

Chapter 2: Literature Review

2.1 Efficiency of Electricity Distribution

Assessment of the efficiency of PDCs in KR in this thesis will be done based on several key indicators, which were identified as important for providing benchmarking analysis of electric utility sectors' performance in the World Bank's report, providing comparison between Sub-Saharan Africa countries (Tallapragada V.S.N., Shkaratan, Izaguirre, Helleranta, Rakhman, & Bergman, 2009).

Key performance indicators, used by the authors of the abovementioned report for benchmarking, include such indicators as system losses of electricity, capacity and load factors, number of outages, residential tariffs, accounts receivable and many others. While recognizing importance of all these indicators, due to limitations in the data available and specific hydropower-dependent character of the Kyrgyzstan's energy system, for assessing efficiency of electricity distribution companies in the Kyrgyz Republic the author decided to focus on several indices. These are technical and non-technical (commercial) losses of energy, payment collection rate and accounts receivable in days.

Total system losses – equal to the difference between the volume of power supplied to the electricity distribution grid in a country and the volume of power billed to customers.

System losses are composed of *technical losses* and *non-technical losses*, which result from use of poor metering equipment, encryption losses in billing

and fraudulent activities such as meter tampering, unauthorized use or theft of power (Tallapragada et al., 2009). According to the methodology used in the report, total system losses do not include collection losses resulting from customers' unwillingness or inability to pay, billing and collecting failures. Thus, system losses directly measures technical efficiency of utility operations and only partially reflects commercial efficiency, because it takes account of billing and metering errors, and electricity pilfering, but excludes incomplete collection of billed payments (Tallapragada et al., 2009)

Tallapragada et al. (2009) argue that system losses is one of the most important indicators for developing countries since it affects both financial and commercial aspects of performance and therefore is a sign of the overall performance and efficiency of a utility company. In many situations reducing system losses is a way to quickly improve financial performance of utility enterprises (Tallapragada et al., 2009).

Tariff collection rate and *accounts receivable* in days (days of sales outstanding) are closely related important indicators of electric utility companies' performance, showing the speed and effectiveness of payment collection (Tallapragada et al., 2009).

The formula used for calculation of accounts receivable in days, also called the average collection period, in days is:

Accounts receivable in days = Year end accounts receivable /

(Annual operating revenue / 365 days)

The less this indicator the more financially efficient the utility company is (Tallapragada et al., 2009).

2.2 Rent-Seeking and Corruption

2.2.1 Rents

Discussion of rents, rent-seeking and corruption in this paper is based primarily upon contribution of Mushtaq H. Khan.

The classical definition of *rents* provided in the economics literature is of income higher than the minimum that would be accepted in the next best opportunity of the economic agent in question (Khan, 2000). Khan's view of rents is radically different from that of the classical economics, which holds that all rents negatively affect growth. He argues that in real world scenarios different types of rents might have different implications for economic growth. Effect of some rents can be leading to inefficiency and impeding growth, whereas other rents can have growth-facilitating effects, especially in developing countries (Khan, "Rents, Efficiency and Growth", "Rent-seeking as Process", 2000). Therefore, Khan (2000) holds that capacity to recognize good and bad rents might be crucial for policy makers and analysts for effectively managing development.

Neoclassical economic literature discussing rents was devoted mostly to the analysis of monopoly rents and their adverse effects on efficiency (Khan, 2000). Apart from monopoly rents Khan (2000) describes the following types of rents to be identified in real world: natural resource rents, politically organized transfers, Schumpeterian rents, rents for learning and rents for good management.

According to the neoclassical analysis of markets, monopoly rents are considered to be signs of inefficiency, since as a result of absence of competition in monopolistic markets a monopolist is able to reap profits by limiting supply

and keeping prices high, which, in turn, will be leading to reduction in the overall social benefits by decreasing both consumer and producer surpluses (Khan, 2000). Khan (2000) suggests that monopoly rents themselves do not directly represent social cost, but he points out that these rents signal about inefficiency of allocation.

Khan (200) suggests that natural monopolies, such as in the area of providing utility services, are different from other monopolies as their monopolistic status is not the result of artificial market entry barriers, but is rather a condition necessitated by economies of scale. Khan (2000) argues that when analyzing natural monopolies the social costs in the form of deadweight welfare loss should be compared with the costs of breaking monopoly up into many smaller units, which would each have higher marginal costs. In this case the best suggested policy would be to keep monopoly, but to regulate its operations and provide subsidies as incentives for increasing production volumes up to optimal level (Khan, 2010).

Rents based on transfers are created through political mechanism (Khan, 2000). In developing countries transfers in the form of taxes and subsidies often serve as a basis for asset accumulation and emergence of middle class and new capitalists (Khan, 2000). The transfer mechanisms involved in creation of rents include taxes, subsidies and legal and illegal transfers related to privatizing public property (Khan, 2000).

In order for capitalists to emerge, creation of capitalist property is needed (Khan, 2000). Khan (2000) argues that this in turn requires transfers that would be effectively resulting in “necessary” primitive accumulation and not “unnecessary”

one, which is associated with increase in corruption and theft. In many developing countries transfers play important role in provision of political stability, however, taking into consideration, as Khan (2000) characterizes it, "unfairness inherent to processes of primitive accumulation" creates opportunity for political intermediaries to appropriate substantial portions of the transfers. Thus effects, which transfers might have on growth, can be positive or negative depending on incentives for transitioning to productive capitalism that recipients of the significant share of those transfers have (Khan, 2000). For this reason, in some countries transfers resulted in rapid accumulation and capitalist growth, while in others in large-scale theft and outflow of resources to foreign banks (Khan, 2000). Hence, assessment of potential economic implications of this type of rents in developing economies is very difficult and will require careful analysis of distribution of political power, incentives of different competing groups for channeling transferred resources to investments within the economy in question (Khan, 2000).

Natural resource rents is income gained by owners of scarce natural resources, and contrary to monopoly rents the existence of natural resource rents often signals about efficiency in resource allocation and may be required for growth (Khan, 2000). Moreover it is socially desirable to maximize natural resource rents (Khan, 2000).

Schumpeterian rents are generated as a result of innovation and new information creation and are vital for facilitating growth and development (Khan, 2000). *Information rents*, much like innovation rents, are source of higher than acceptable returns and are important in making markets in developing countries,

permeated by asymmetric information, work (Khan, 2000). In developing countries, as argued by Khan (2000) information rents are often much higher than in developed countries due to weak information dissemination institutions. According to Khan (2000), *rents for learning* are mostly responsible for leading growth in developing counties as they reward firms for adopting technologies already well known in advanced countries.

Monitoring rents (Khan, 2000) are returns serving as incentives for providing good management. Alchian and Demsetz (1972) argued that if owners of cooperating inputs agree with the monitor (manager) that he or she is to receive the residual above prescribed amounts, he will have increased incentives to perform his monitoring (management) functions better. Asymmetric information

Figure 7: Relevant Growth and Efficiency Implications of Different Rents

Figure 1.13 Relevant Growth and Efficiency Implications of Different Rents

TYPE OF RENT	EFFICIENCY IMPLICATIONS (Static NSB)	GROWTH IMPLICATIONS (NSB Over Time)	OBSERVATIONS
Monopoly Rent	Inefficient	Likely to Be Growth-Reducing	Sometimes Difficult to Distinguish from Schumpeterian or Learning Rents
Natural Resource Rent	Efficient	Likely to Be Growth-Enhancing	
Rent-Like Transfers	Neutral with Possible Incentive Inefficiencies	Indeterminate: May Be Growth-Enhancing	May Be Essential for Primitive Accumulation and to Maintain Political Stability but may also become Inefficient very rapidly
Schumpeterian Rent	May Be Efficient	Likely to Be Growth-Enhancing	May Become Monopoly Rent if it persists for too long
Rents for Learning	Inefficient	May Be Growth-Enhancing	Efficiency May Depend on Monitoring and Enforcement Ability of the State
Rents for Monitoring	May Be Efficient	May Be Growth-Enhancing	Efficiency May Depend on Monitoring and Enforcement Ability of Monitors

Source: Ch. 1 "Rents, Efficiency and Growth" from Khan and Jomo (2000)

is thought to play crucial role in Alchian and Demsetz's argument, since it may be costly for managers to uncover facts about employees' real efforts on the job (Khan, 2000). These rents like information-generation and innovation rents are considered efficient taking into account the costliness of information (Khan, 2000). Figure 7 below summarizes Khan's arguments about growth and efficiency implications of different rent types.

Classical (Marxian analysis) economics holds that economic surplus (rents) is essential for growth, hence the latter will be damaged if the surplus is misallocated to non-productive uses or consumed by parasitic capitalists (Khan, 2000). Also in accordance with the classical theory, the main role of the surplus (rents) is in its acting as a source for accumulation (Khan, 2000). The neoclassical theory looks at rents as provider of incentives for innovation, learning, information generation, monitoring, etc. rather than direct source of investments (Khan, 2000).

Khan (2000) demonstrated that it is difficult to differentiate between efficient and inefficient rents and that sometimes presence of rents can be signs of dynamic and efficient economy while their absence can sometimes signal inefficiency and stagnation.

Having discussed basic theory of rents and their types, we need to continue our theoretical discussion with coverage of rent-seeking activities, which will later allow us to analyze rents and rent-seeking activities observed in Kyrgyzstan's power sector.

2.2.2 Rent-Seeking

According to Khan (2000) *rent-seeking* is the expenditure of resources and effort in creating, maintaining and transferring rents. These expenditures can come in legal forms, like lobbying, queuing or contributions to political parties, and illegal - bribes, illegal political contributions, etc. (Khan, 2000). In his discussion of rents Khan (2000) demonstrated that rents are closely related to the economic rights underpinning them. For this reason, rent-seeking is related to processes of institutional change, which alter the very economic rights defining rents. The outcomes of the institutional change depend on a multitude of variables including incentives created by previous institutional settings (Khan, 2000). Khan (2000) suggests that political variables, especially the *distribution of political power*, can determine winners and losers in distributive contests. This means that a more general approach to analyzing rent-seeking should include consideration of political and institutional variables to explain how much effort is put into rent-seeking and types of rights and rents created as a result (Khan, 2000).

According to Khan (2000) when assessing the net effect of a rent-seeking process, one should not limit himself with considering only the rent-seeking costs (input part) of the issue but extend the analysis by considering the rents created as well (output part). Thus, Khan's (2000) main argument is that rent-seeking is a process, whose overall effect is dependent on two related components: net social cost or benefit associated with the rents and social costs of activities aiming to create, maintain and reallocate those rents.

However, analysis of rent-seeking should also embrace consideration of who participates in the process. Khan (2000) argues that consideration of patron-client networks involved in organization of rent-seeking in developing countries,

relative power of classes and groups involved can provide valuable insight into social and political aspects of the rent-seeking process.

2.2.3 Corruption and Patron-Client Networks

Khan (2000) maintains that in developing countries a meaningful share of rent-seeking expenditures is spent in *patron-client networks* and most of rents resulting are also often distributed within these networks. According to Khan (2000) large share of these expenditures is illegal and comes in the form of payoffs to political factions to retain their allegiance, payments to mafia bosses, etc. Such inputs maintain the organizational power of patrons, which is often critical for winning rent-seeking contests (Khan, 2000).

Khan (2000) argues that rent-seeking, which was endemic in both developing and developed countries, is more extensive in the former, more often appears in illegal forms and is more damaging for growth. According to Khan (2000) difference in the economic performance of different countries depend more on the types of rents created as a result of rent-seeking activities and less on the size of the rent-seeking expenditures.

In his discussion of implications that bribes in patron-client networks have on economic growth Khan (1996) argues that it is determined by the type of patron-client networks prevalent in a country. He distinguishes between *patrimonial* and *clientelist* patron-client networks. *Patrimonial* patron-client networks are defined as present when state is able to protect existing property rights at low cost and are not typical for developing countries (Khan, The Efficiency Implications of Corruption, 1996). In *clientelist* patron-client networks

state officials, on the contrary, are unable to enforce rights, which means that these "clientelist" groups will have the opportunity to control rights. Khan (1996) argues that under patrimonial networks state officials would have incentives to create long-term productive rights meaning that inputs from the rent-seeking will not be withdrawn from the production function. In clientelist network based economies, where there are many such networks competing for power, due to increased volatility nobody would be ready to create long-term rights (Khan, 1996).

2.2.4 Cronyism and Economic Performance

Analysis of rent-seeking in a specific country can be supplemented by David Kang's (2003) argument that economic growth can be dependent on the number of competitors participating in a rent-seeking process.

In new institutional economics the term *cronyism* is used to refer to structures, in which such phenomena as bribery, corruption, family and personal ties, patron-client networks are closely intertwined (Kang, 2003). Since under cronyism decisions are made based on nonmarket principles, the scope for rent-seeking is broadly increased, economic incentives are distorted, etc.; cronyism is often considered as harmful for economic growth and efficiency (Kang, 2003). However, Kang (2003) argues that some types of cronyism can be effective in decreasing *transaction costs*, which represent a major problem for economic growth in all countries. He affirms (Kang, 2003) that transaction costs are lower the lower the number of participants in a rent-seeking process. Using several Asian countries as examples, Kang tried to demonstrate how this principle works

in real life scenarios. Kang explains that in South Korea transaction costs were low due to the established system of "mutual hostages" between business and government elites. "Mutual hostages" exist when there are a small and stable number of government and business actors, who have significant vulnerability to each other. This allows them to limit opportunism of the other party, while maintaining the incentive for continuing cooperation (Kang, 2003).

On the contrary, in Philippines transaction costs were high, which was the cause of lower economic efficiency, due to big number of actors, which were highly volatile in their political standings and found it difficult to reach long-term political stability (Kang, 2003).

2.2.5 Corruption in Electric Utilities

Dal Bo and Rossi conducted a study seeking to define the relationship between corruption and efficiency of electricity distribution enterprises in Latin America (2007). Data of 80 companies from 13 Latin American companies for the period 1994-2001 was analyzed. Dal Bo and Rossi's (2007) main finding was that corruption is strongly correlated to the inefficiency of firms. The authors' explanation was that corruption might be affecting efficiency by diverting managerial efforts from supervision and coordination of the productive process, thus implying that the more corrupt countries, the less efficient are firms (Dal Bo & Rossi, 2007). Another important finding of the study was that private firms were much more efficient in the use of labor compared to public enterprises.

2.3 Analytical Framework

Analysis of effects that rent-seeking activities in the power sector have on performance of electric energy utilities is based on the analytical framework, developed by Khan (2000) and used by Suzuki (2001) for analyzing rent-seeking activities' impact on India's electric power development.

The model allows analyzing both inputs and outputs of rent-seeking processes. Suzuki (2001) argues that analyzing "structure of rights" ("outputs" of rent-seeking) will help define the relationships between input and output sides of any rent-seeking activities in different countries or institutions. In this thesis Khan's framework is used to analyze Kyrgyzstan's indigenous "structure of rights" as related to the power sector to analyze how rent-seeking activities in the sector (corruption, bribery, etc.) affect operational and financial performance of the sector's SOEs.

The model is based on Khan's perspective on the rent-seeking process laid down in the rent-seeking section of this chapter. Figure 8 graphically illustrates Khan's (2000) framework looking at rent-seeking as a process, whose overall effect is dependent on two related components: net social cost or benefit associated with the rents (output of rent-seeking) and social costs of activities aiming to create, maintain and reallocate those rents (input of rent-seeking).

Khan (2000) explains his framework as follows. The existing structure of economic rights is shown at the top of the diagram. This structure defines incentives affecting allocation of resources between production and rent-seeking activities. Resources that are channeled into production increase "final outputs" in the form of goods and services thus causing an increase in the net social benefit. This process is called by Khan the "conventional production" and is represented

on the diagram by the horizontal box. According to Suzuki (2001) these "final outputs" determine growth and efficiency of the economy.

Khan (2000) explains that concurrently with putting resources into production, some share of those resources is allocated to rent-seeking activities, shown in the vertically placed box. Starting position for rent-seeking process is the existing structure of rights, which at the end of rent-seeking cycle can be reproduced in its original form or altered, thus changing the starting conditions for the new round of rent-seeking (Khan, 2000).

This model helps to see two possible effects of rent-seeking (Khan, 2000). The first effect is the loss of final output resulting from withdrawal of resources from production and transferring them as inputs into rent-seeking. This loss is the

Figure 8: Analytical Model: Interface of Conventional Production and Rent-Seeking

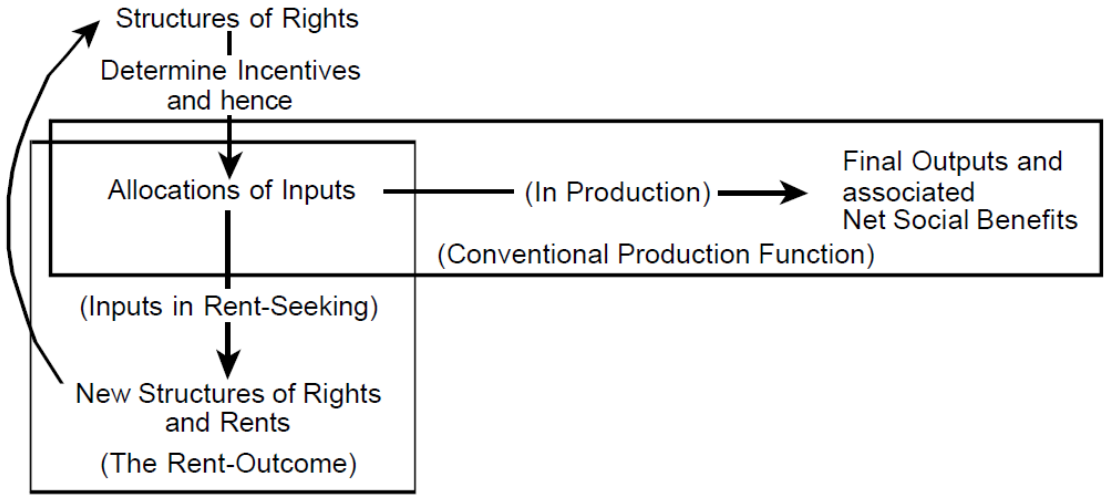


Figure 2.3 The Interface of Conventional Production and Rent-Seeking

Source: Ch. 2 "Rent-seeking as Process" from Khan and Jomo (2000)

input cost of the rent-seeking and represents decrease in net social benefits. The second effect pertains to creation, maintenance and reallocation of rents (Khan,

2000). It is measured by the difference between the net social benefit with the rights created by a specific type of rent-seeking and the net social benefit which would have obtained without these rights (Khan, 2000). This means that certain structures of rights can have positive or negative implications for efficiency and growth under certain resource allocation scenarios. Suzuki (2001) argues that, although according to Khan the most accurate assessment of the net effect of rent-seeking is done when combining the effects from both, the model demonstrates that analysis of the structure of rights is greatly outweighed.

2.4 Privatization

At the end of the twentieth century the world witnessed significant changes in the political and economic landscape, including mass collapse of communism order in the previously powerful block of socialist states. Mass transition of post-communist countries to capitalism all over the world necessitated drastic economic reforms.

2.4.1 Reasons for Privatization

Privatization started in late 1970s in Thatcherist Great Britain following disappointment with dismal performance of SOEs and sluggish economic performance of socialist states (Guriev & Megginson, 2007). Since then tens of thousands of firms in more than 100 countries have been privatized (Guriev & Megginson, 2007).

Basic argument for privatization is that by strengthening the incentives for profit maximization previously absent in state-owned enterprises it should result

in improved performance (Guriev & Megginson, 2007; Sheshinski & Lopez-Calva, 2003).

Low efficiency and poor performance of public enterprises is frequently named as the primary reason for privatization (Boycko, Shleifer, & Wishny, 1996). According to Boycko, Shleifer and Wishny (1996) inefficiency of public enterprises can to a large extent be explained by the SOEs' being controlled by politicians, who force them to pursue strategies maximizing payoffs for politicians. Among these strategies maintaining excess employment is the most frequently mentioned politically requested inefficiency driver (Boycko, Shleifer, & Wishny, 1996). Due to such view of excess employment Boycko, Shleifer and Wishny (1996) define privatization as "reallocation of control rights over employment from politicians to managers and increase in the cash flow ownership of managers and private investors".

In his discussion of differences between public and private ownership, Shleifer (1998) argues that the social justification of the need for government ownership is weak when *patronage*[2] is widespread, like in many developing countries.

Another example of politicians' using SOEs to win political support can be seen in cases where tariffs or prices charged by SOEs are significantly lower than marginal costs (Shleifer & Wishny, Politicians and Firms, 1994; Yarrow, A Theory of Privatization, or Why Bureaucrats are Still in Business, 1999).

[2] According to Shleifer (1998), *patronage* is the transfer of wealth to constituents through the use of government-owned assets in exchange for political support

According to Yarrow (1999) and Wood (2004) it is the fiscal pressure that is the most common trigger for privatization and SOE reforms. Yarrow (1999) explains that governments of many countries throughout much of the twentieth century faced constant pressure to increase public expenditures, which in turn caused an increase in the opportunity costs of public finance. This has widely resulted in cuts in public investment programs, SOE budgets and divestitures of SOEs (Yarrow, A Theory of Privatization, or Why Bureaucrats are Still in Business, 1999). As a result of growing fiscal pressure, liquidity-constrained governments started to have stronger incentives to conduct privatization in order to raise funds through divestiture of SOEs and to eliminate public subsidies (Wood, 2004).

Besides internal causal factors decisions to privatize public sector enterprises in many developing countries were influenced by major international financial organizations such as the International Monetary Fund and the World Bank, which were both highly committed to including privatization in their lending conditionality packages (Wood, 2004). The privatization trend in the late 1980s and 1990s was partially triggered by increasing requests for privatization reforms into conditions of structural adjustment lending by the named international financial organizations (Cook & Kirkpatrick, 1997).

2.4.2 Incentives and Agency Problems

Sheshinski and Lopez-Calva (2003) argue that inefficiency of public firms is caused by the incentives and contracting problems. SOE managers' incentives are distorted because they have to follow strategies imposed by politicians and not

those dictated by the market, and due to lenient monitoring requirements for their performance imposed by government officials (Sheshinski & Lopez-Calva, 2003).

According to Yarrow (1986) effect of privatization on economic performance is indirect and is applied through behavioral changes, caused by shifts in incentives. Yarrow (1999) argues that one of the main conclusions to be drawn from the economic analysis of privatization is that the policy environments, in which firms operate, are outcomes of incentive structures faced by policy makers, who, in their turn, depend on many political and institutional factors, such as interest group pressures, the balance of political forces, bureaucratic goals, the influence of public opinion, etc. Viewed from this perspective privatization can be defined, as a means of reducing the impact of political factors on economic incentives, behavior and performance (Yarrow, A Theory of Privatization, or Why Bureaucrats are Still in Business, 1999).

According to Yarrow (1999), in regulated monopolies, where existence of significant asymmetry of information is a norm, there is a lack of dynamic incentives to discover and reveal new information previously unknown to both managers and regulators. As a result it is likely that neither monopolist nor regulator might be aware of real marginal costs.

Critical agency problem is more related to politicians than managers (Boycko, Shleifer, & Wishny, 1996). Shleifer and Wishny (1994) argue that SOEs are inefficient not only as a result of managers' having weak incentives to reduce costs but because of the government's deliberate policy of using them to transfer resources to supporters. Shleifer (1998) argues that elimination of politically motivated resource allocation has been the main positive effect of privatization,

because politicians tend to care more about own political interests and maximizing personal wealth rather than increasing social welfare. Therefore, privatization works, because it separates politicians from controlling firms (Boycko, Shleifer, & Wishny, 1996).

One of the reasons for poor efficiency of public enterprises is in the *soft budget constraint (SBC)* faced by the management. The term initially was used to refer to governments' bailing out state-owned firms in financial distress through subsidies and other instruments, but later its use spread to other fields as well (Kornai, Maskin, & Roland, 2003). In order to maintain employment governments often bail out firms in financial distress, both private and public (Guriev & Megginson, 2007; Sheshinski & Lopez-Calva, 2003). The SBC is the reason significantly weakening managers' incentives to improve efficiency due to elimination of the bankruptcy risks (Guriev & Megginson, 2007).

Schmidt (Schmidt K. M., 1996) proposes to look at privatization and nationalization as different "governance structures", which provide for different incentives for the management to save costs. Schmidt (1996) argues that privatization reduces the amount of information that politicians have, which may lead to the reduction of subsidies and restructuring. It is further argued that, since after privatization managers cannot rely on government's financial support, ensuing hardening of budget constraints will create incentives for managers to improve efficiency (invest into cost reduction). However, as admitted by Schmidt (1996) his model makes strong assumptions both about the role of the government as fully-rational and benevolent decision maker, and about absence of rent-seeking activities.

Another problem, causing weak incentives of SOE managers, is the poor monitoring of their performance. It stems from the fact that SOEs' shares are not traded in the market, which eliminates hostile takeover threat (Sheshinski & Lopez-Calva, 2003).

2.4.3 Empirical Evidence of Post-Privatization Performance

Majority of researchers, discussing privatization and its impact on performance of previously state-owned enterprises, agree that the former generally positively affects overall efficiency in privatized firms and leads to increased profitability and better financial health (Sheshinski & Lopez-Calva, 2003; Guriev & Megginson, 2007).

In some cases, privatization is an effective mechanism for achieving efficiency gains, taking into consideration that in many countries majority of SOEs were low-performing and reforms achieved a rather modest success (Wood, 2004). Increased factor productivity, significant cost reductions and diminished need to provide subsidies were the other effects observed (Wood, 2004).

Evidence shows that privatization has brought about not only improvement in profitability and efficiency but also increase in the volume of capital expenditures (Sheshinski & Lopez-Calva, 2003).

Privatization reforms yielded different results in different countries. In 2007 Guriev and Megginson conducted a comprehensive overview of empirical literature on privatization experience around the world. Their (Guriev & Megginson, 2007) general conclusion made on the basis of the research is that there is a solid evidence for "general" effectiveness of privatization in improving

productivity, which was improved on average by 20 per cent and more than doubled in certain cases. Also it is stated that expectation of overall negative effects that privatization might cause have for economies are not justified.

Another very important empirical finding is that it was observed that performance contracts, corporatization and imposing hard budget constraints on SOEs do not work unless those are privatized (Guriev & Megginson, 2007).

In transition countries success of privatization to a large extent is dependent on complementary institutionary reforms such as introduction of the rule-of-law, hard budget constraints, competition and providing protection to investors (Guriev & Megginson, 2007). In the absence of those privatization is said to have had even negative consequences for economic performance (Guriev & Megginson, 2007). In Russia, Ukraine and other CIS countries, where participation of foreign investors in initial privatization was ruled out due to ideological reasons, privatization resulted in insider dominated non-cash privatizations, leading to creation of a small number of large so called "oligarchic" business groups (Guriev & Megginson, 2007). However, as argued by Guriev and Megginson (2007) despite initial failure of privatization in Russia we can see that gradual post-privatization reallocation is leading to creation of efficient ownership structure.

Implications for Welfare

A major concern of the public as related to the privatization of public utilities is that it is likely to cause negative implications for social welfare. The logic is that private investors, who are portrayed as purely capitalist minded profit-seekers caring about nothing but own financial benefit, will only make

efforts to maximize profits at the expense of people, with the poorest of them being expected to suffer the most.

However, according to Guriev and Megginson (2007) many studies of the welfare effects of privatization revealed substantial positive benefits, especially for lower income groups. Wood (2004) also states that privatization does not necessarily negatively affect welfare of the poor, but on the contrary argues that the poor can in some cases be the biggest beneficiaries of public utilities' privatization. Wood (2004) provides data on several studies aimed at measuring the welfare effect of privatizing utilities in Chile in the late 1980s. Based on the findings of those studies Wood (2004) suggests that welfare gain resulting from privatization in the context of adequate regulation far outweighs its costs.

According to Wood (2004) state-run monopolies help reduce inequalities because they allow for explicit and implicit cross-subsidies of one category of consumers, which is costly to serve, by another. Cross-subsidization of high costs of serving rural consumers by urban consumers of electricity provides a good illustration for this (Wood, 2004).

However, in many cases we can see that subsidies in the power sector are provided on across-the-table principle, with electricity tariff structures constructed in a way to provide the largest benefit to the most politically active and influential categories of consumers. It is increasingly argued that problems of income distribution and social protection can be efficiently addressed via mechanism of targeted subsidies to people in need rather than providing subsidies to the whole group of consumers (Bacon & Besant-Jones, 2001).

Foreign Ownership

Boycko, Shleifer and Wishny (1996) argue that divesting SOEs to large outside investors is more conducive for efficiency and restructuring. They suggest that the reason for that is their interest in profits and not much in preserving employment. Due to such difference in their preferences from politicians, such investors are harder to bribe through subsidies (Boycko, Shleifer, & Wishny, 1996). Positive effect of privatization to foreign investors in CIS countries as opposed to domestic investors was found in a study the World Bank (Estrin, Hanousek, Kocenda, & Svejnar, 2009). Privatization to foreign owners resulted in a positive or insignificant effect on total factor productivity, whereas to domestic – negative or insignificant effect.

It is argued that foreign ownership generally positively affects efficiency of previously state-owned enterprises. Most of empirical studies indicate a positive role of foreign ownership with such firms delivering higher productivity improvements (Guriev & Megginson, 2007; Sheshinski & Lopez-Calva, 2003). Participation of foreign investors strengthens competitiveness of privatization bidding, which maximizes the sale price and helps attract a more efficient owner (Guriev & Megginson, 2007). Guriev and Megginson (2007) state that in many cases participation of foreign investors was ruled out due to ideological reasons, which was observed to cause such negative implications as low privatization revenues for governments and inefficient insider ownership, like in Russia, where it resulted in the general distrust to the credibility of the reforms.

2.4.4 Macroeconomic Implications of Privatization

By using the proceeds from privatization to decrease public debt governments were able to decrease interest payments and provide stronger cash flow position of the public sector (Sheshinski & Lopez-Calva, 2003). Privatization is said to result in lower interest rates, which are conducive for boosting investment, growth and lowering inflation (Sheshinski & Lopez-Calva, 2003). Results of the IMF study also suggest that privatization can be conducive to economic growth, as was demonstrated by the strong positive correlation between privatization and real GDP growth and negative correlation with unemployment rate (Davis, Ossowski, Richardson, & Barnett, 2000).

Results of the study conducted by Estrin et al. (2009) suggest that privatization, especially if accompanied by complementary reforms, can have positive effect on the level of aggregate output.

In many countries privatization also leads to development of financial markets and increase in stock market capitalization (Sheshinski & Lopez-Calva, 2003).

Another positive financial outcome of privatization can be a substantial decrease in the amount of subsidies allocated to SOEs. After privatization low income countries managed to drastically decrease net subsidies to public enterprises on average from 6 per cent to 0.5 per cent of GDP (Sheshinski & Lopez-Calva, 2003)

2.4.5 Important Factors Defining Success of Privatization

Many researchers recognized that privatization, not preceded or accompanied by complementary systemic changes and reforms, cannot guarantee

positive results for improving performance of SOEs (Estrin, Hanousek, Kocenda, & Svejnar, 2009).

Guriev and Megginson (2007) indicate that success of privatization depend on many complementary factors such as property rights protection, competition and openness, hard budget constraints, low level of corruption, etc. They argue (Guriev & Megginson, 2007) that the assessment of effects that privatization might have on privatized firms, as well as respective countries' economies and population, will be difficult since it would require making adjustments for the complimentary effects of other reforms, which might be a very challenging exercise.

Yarrow (1999) argues that privatization of SOEs can necessitate only a minor adjustment of regulatory policy in cases when public monopoly was simply replaced by a private monopoly. However, in those cases when privatization is a part of a large-scale policy change it can require major bring major changes. It is the overall package of regulatory reforms that has most economic importance and not privatization alone argues Yarrow (1999).

In 1995 the World Bank published a report, written to address the problem of slow progress with privatization and other public enterprise reforms (Cook & Kirkpatrick, 1997). The report examines a set of measures included in packages of public enterprise reforms and defining success of those reforms. These are measures, introduced in as complementary to mere divestiture of SOEs, such as introducing competition policy, imposing hard budget constraints, financial reforms and changes in the institutional relationship between public enterprises and government (Cook & Kirkpatrick, 1997). In the report it is suggested that

improving macroeconomic environment and efforts to reduce the opposition to reform by public enterprises' employees and groups depending on the SOE sector is a pre-requisite for successful privatization (Cook & Kirkpatrick, 1997). The report also suggests that the reason for poor progress with privatization reform lies in the political obstacles created. In many cases problems and possible solutions were revealed long ago, but decisive action was halted for long due to priority objectives that had to be tackled by the incumbent governments at that time (Bacon & Besant-Jones, 2001). Because there are always people, who are likely to suffer from reforms like employees laid off, customers faced with increased tariffs or fees, or politicians and bureaucrats who will lose a sphere for patronage; to make privatization happen it is needed that some sufficient benefits be provided to them to persuade them to support privatization (Bacon & Besant-Jones, 2001).

2.4.6 Arguments against Privatization

According to Shleifer (1998) privatization may result in new owners' placing too much emphasis on profit maximization, which can be detrimental to other socially valuable objectives. He emphasizes (Shleifer, State versus Private Ownership, 1998) that for this reason in most developing countries public ownership was typical in so-called "strategic" sectors of the economy. Wood (2004) suggests that in infrastructure sector profit-seeking organizations are unlikely to take the poorest and least advantaged people into consideration when developing or repairing infrastructure. Indeed, it would be difficult to expect a private companies, for instance, a private electricity distribution company to finance construction of an electric line to provide electricity to remote rural areas

taking into account the costs and potential economic returns of that for the company.

Yarrow (1999) states that there were many case studies of nationalization, when the nationalization was carried out as a pragmatic response to problems, encountered by key interest groups in the economy. According to Yarrow (1986), government monitoring can potentially be better than private ownership because to quote him: "Public ownership provides an instrument for correcting failures (inefficiencies) in the markets for goods, factors and corporate control."

According to Guriev and Megginson (2007) privatization can lead to creation of powerful interest groups, such as large private monopolies, that can influence economic policy making. For example, in economies with weak institutions it is very likely that private monopolies will exert their influence to hinder development of any policies aiming for development of competition (Guriev & Megginson, 2007).

In countries with weak institutions and high level of corruption, rapid- and mass privatization schemes can lead to stagnation and decapitalization as responsibility to control mediocre assets is given to people, who cannot manage them effectively (Wood, 2004).

In general, privatization is an easy target to attack suggests Wood (2004). He (Wood, 2004) explains that since negative results of privatization are so visible to the public it is easy to rally support, whereas it is difficult to make the public understand the economic counter-arguments. Also people negatively affected by privatization usually tend to be more organized and vocal. They try to represent own loss as exemplary of an overall loss to society (Wood, 2004). This coupled

with their typically being members of previously protected social classes, enables them to be relatively effective in protecting own interests by opposing privatization (Wood, 2004).

2.5 Privatization of Public Utilities

Increasing tempo of privatization and liberalization of power sector electric utilities observed in the last decade of the twentieth century was triggered by the following main forces: high costs, inadequate access to electricity services for population and unreliable supply, the inability of state to finance maintenance and reconstruction of main assets, the need to withdraw subsidies and opportunities to raise funds through divestiture of SOEs (Bacon & Besant-Jones, 2001).

2.5.1 Implications for Efficiency

According to Wood (2004) public utilities are natural monopolies, which requires intervention by the state in their operations in order to provide for the overall welfare of society. So in case of privatizing natural monopolies governments preserve the ability to intervene by keeping the right to regulate such industries (Wood, 2004). Empirical evidence indicates that the most important factor defining success of utilities' privatization is regulatory policy (Wood, 2004).

When it comes to the privatization of natural monopolies the important question to be asked by governments is how to deal with the possibility of exploitation of market power by private owners by imposing regulatory

constraints on private firms without hindering innovation and cost-reduction (Sheshinski & Lopez-Calva, 2003).

Auriol and Blanc (2009) summarize empirical evidence from full and partial privatization of electric utilities with the general conclusion testifying to the effectiveness of privatization reforms to yield positive implications for efficiency. For instance, Auriol and Blanc (2009) describe findings of a study providing evidence from privatizing electricity distribution in 116 cases in 10 Latin American countries indicating that privatization leads to improvements in labor productivity, efficiency and quality of service. However, it is mentioned that the downside of such drastic improvement is that it came at the expense of employment, which was cut by more than 40 per cent (Auriol & Blanc, 2009). Another study covering 302 utilities with private sector participation (PSP) and 928 without PSP found that PSP results in strong impact on the efficiency, raises bill collection ratios and improvement in the quality of service (Auriol & Blanc, 2009).

2.5.2 Important Factors Requiring Consideration

According to Sheshinski and Lopez-Calva (2003) privatization of infrastructure[3] was less effective due to two types of policy mistakes: poor design of concessions and inappropriate regulatory activities and tools. However, the general conclusion was that privatization of infrastructure yields positive results in the form of attained efficiency gains as well as increased volume of investments

[3] Infrastructure sector includes electricity, water distribution, natural gas distribution, telecoms, transportation and toll-roads.

into infrastructure, given that appropriate regulation was put in place (Sheshinski & Lopez-Calva, 2003).

Auriol and Blanc (2009) state that it is a popular view among consumers in developing countries to consider privatization as being detrimental to the welfare of the poor, while beneficial for the powerful and wealthy, notably through corruption.

Wood (2004) argues that if privatized utility company substantially increases its ability to collect revenue the poor, which previously were able to free ride, will bear higher costs. Price increases, which usually follow privatization of utilities, will also cause additional financial burden for the poor, but are inevitable and even essential for utilities to become self-sufficient (Wood, 2004). At the same time Wood (2004) suggests that privatization might in some cases lead to curtailing inequality by necessitating the revision of unfair tariff structures and subsidies that often benefitted the better politically connected, usually the urban middle class.

Wood (2004) suggests that taking into account the social sensitivity as related to the privatization of utilities, it is crucial for governments, planning to undertake privatization, to make the best effort to take into consideration the interests of the poor. This is required because, if there is a perception that privatization was detrimental to the overall welfare, the political implications might be devastating (Wood, 2004).

It is again emphasized that in order for the privatization to succeed, the public should recognize the credibility of privatization and perceive it as

beneficial for them, which in turn would require the introduction of a well thought-out regulatory framework (Wood, 2004).

Chapter 3: Methodology and Analytical Framework

3.1 Research questions

1. How do corruption and other rent-seeking activities in the power sector affect efficiency and profitability of power sector enterprises?
2. Why is privatization of power distribution companies likely to bring about improvement in efficiency and growth?

3.2 Methodology

The research method chosen for conducting this research is Qualitative Case Study Method. Merriam (1998) argues that the case study provides rich and holistic view of real-life research problems. Therefore, this research method enables to reach an in-depth understanding of the complex issue of the state-owned electric utility companies' inefficiency and factors causing it in the intricate political economy context of the Kyrgyz Republic.

According to Merriam (1998) qualitative research design is chosen when researchers are interested in insight, discovery, and interpretation and not in hypothesis testing. Merriam (1998) argues that Case Study method has particularistic, descriptive and heuristic features, which are of special importance for defining conditions of its applicability. *Particularistic* feature means that case study focuses on particular phenomenon, situation, event or program making it a good choice for researching practical problems. *Descriptive* feature provides for comprehensive, rich description of researched issue and cover consideration of as

many variables affecting the issue as possible. Heuristic feature is related to ability of a researcher to reach deep understanding of the phenomenon leading to confirmation of previously known and discovery of new aspects of the research subject.

According to Merriam (1998) case study as opposed to other types of qualitative research does not require usage of any particular method of data collection and analysis. In conducting the research the author relies on data collected from variety of secondary data sources, described in the next section. The author's three years working experience as a policy maker with responsibilities for monitoring of the electric energy distribution companies also contributed to the conduct of the research.

3.3 Sources of Data

The research was conducted on the basis of secondary data from multitude of sources, including:

- laws and regulations of the Kyrgyz Republic;
- officially published statistical data of National Bank of the Kyrgyz Republic, the National Statistics Committee of the Kyrgyz Republic, etc.
- power sector enterprises' financial and operational performance data for years 2010 and 2011. Provided by the MEIKR in electronic spreadsheet format;
- reports by international financial and development organizations such as the World Bank, the IMF, the UNDP, various NGOs, consulting companies, etc.;

- books, academic journals, newspapers, internet websites.
- empirical evidence on the experience of privatizing SOEs and especially public utility companies' in developing and transition countries.

Chapter 4: Presentation of Materials

4.1 Performance of the Power Distribution Sector

Inefficiency pervaded the power sector of Kyrgyzstan. Companies of the power sector, owned and managed by the state, have been delivering consistently poor performance since unbundling of the vertically integrated monopoly took place in 2001. The Government of the Kyrgyz Republic in 2008 enacted a decree, which approved the National Energy Program of the Kyrgyz Republic for 2008-2010 and the Development of the Fuel Energy Complex to 2025. The program listed the following as main problems of the power sector: poor operating and financial management; high technical and commercial losses of power resulting from high rate of wear and electric energy pilfering; poor bill payment discipline by consumers; inadequate financing of equipment reconstruction, etc. (Government of the Kyrgyz Republic, 2008).

Deeper insight into problems of the power distribution sector will be provided below.

4.1.1 Managerial and Operational Problems

In 2010 in response to the request by the Ministry of Energy of the Kyrgyz Republic (currently MEIKR) consulting company, TetraTech Es, Inc., was commissioned by the USAID to conduct management diagnostic study of major energy companies (TetraTech Es, Inc., 2011). The diagnostic was aimed at identifying ways of improving governance and performance of each company to achieve higher efficiency and self-sustainability of the power sector. The first

phase of the diagnostic was conducted from November 2010 to March 2011 and was based primarily on interviews with senior and mid-level managers of the companies, and the MEIKR staff. As stated in the consultancy firm's report, the first phase of the diagnostic exercise was expected to provide quick identification of the most evident weaknesses and highest priority opportunities for significant improvements in the management practices and operations of the companies (TetraTech Es, Inc., 2011). As a result of the diagnostic review of the PDCs the consultant defined the following key problem areas (TetraTech Es, Inc., 2011, p. 1):

1. Insufficient control over electricity flow: metering equipment and verification procedures cannot provide accurate recording of energy flows between generation, transmission and distribution companies
2. Evident exaggeration of reported technical losses, which is likely to be an attempt to deliberately misrepresent commercial losses as technical.
3. The existing regulatory framework and business planning practices allow, condone, and make customers pay for high level of losses.
4. The existing practice of meter reading, billing, disconnection and collection of payments does not permit to provide accurate reporting of electricity delivered versus amounts collected.
5. Organizational structures are designed in such a way that roles and responsibilities are diluted, thus making it very difficult to hold specific individuals or organizational units accountable for performance.
6. There is evidence of high numbers of unregistered as well as unmetered customers. Furthermore, the network and customer databases are outdated.

This environment allows substantial amounts of electricity to be unaccounted for, thus contributing to the high rate of losses.

7. There are insufficient capabilities in loss prevention, loss detection and loss recovery practices throughout the electricity distribution sector. Business processes are weak because specialists are not trained or equipped adequately.

8. In several regions around the country, payments for consumed electricity are still collected in cash by hand. This practice provides the possibility for illicit activities.

9. Financial budgeting as well as the internal financial audit function has a formal character as opposed to being used as a serious means of healthy business planning and ensuring prudent compliance.

10. Remuneration and reward systems throughout the sector are designed in a way that provokes and enables illicit activities as opposed to encouraging employees to work with integrity and motivation.

11. There is weak control over procurement practices. Although the companies demonstrate some degree of formal transparency in this process, there is evidence that some steps are taken to deny certain vendors from participating in a truly competitive bidding process.

12. Materials and inventory control systems need substantial strengthening. There is clear evidence that materials in warehouses are not being tracked properly.

13. There is little evidence of a shared understanding across the distribution sector about the strategy and implementation of the reforms that are necessary to achieve self-sustaining operations.

14. There are 16 so-called enclaves or small licensees. These are very small companies that own (or lease) very limited assets (sometimes only one transformer) and over the years have been put in an advantageous position to supply the best paying customers. This deprives the main distribution companies of substantial revenues[4].

Having interviewed many employees of the power sector companies the consultant have found that none of the companies had developed corporate strategies, which would be in line with and conform to the sectorial development strategy devised by the MEIKR; that most top managers were unable to formulate their vision of their company's strategy for achieving self-sustainability; that most employees lack initiative and motivation to undertake any efforts to contribute to improving performance preferring to limit themselves to doing just enough to keep their current positions (TetraTech Es, Inc., 2011).

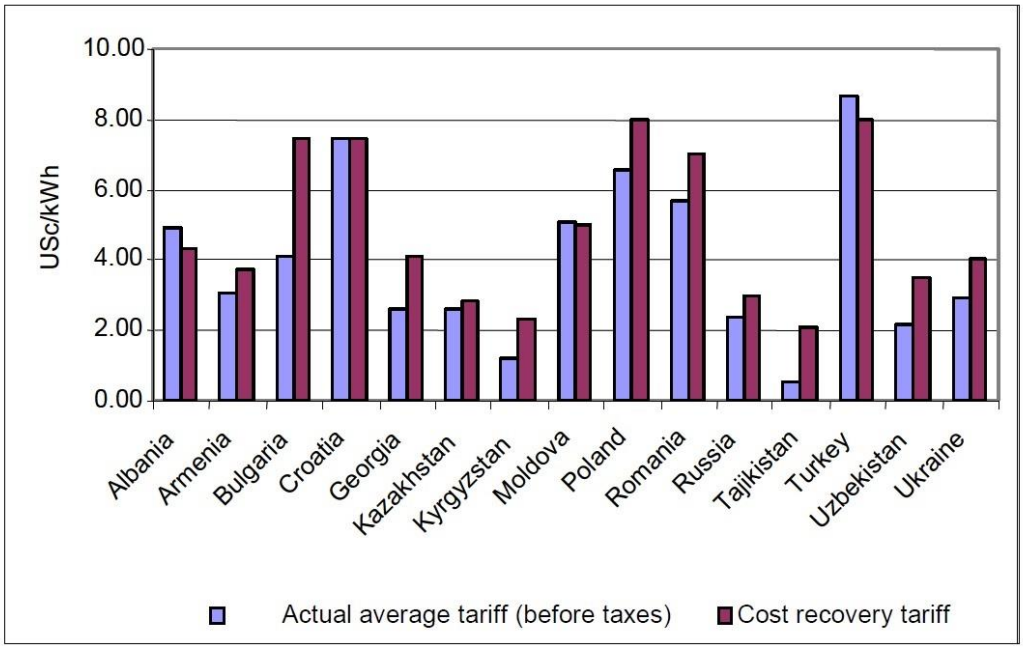
4.1.2 Tariffs and Cost-recovery

It is important to note that during Soviet times Kyrgyzstan had robust industrialized economy and power sector's output was mainly consumed by industrial enterprises with population accounting for only small share of the total energy consumption. Economic recession, resulting from the Soviet Union's collapse, led to dramatic drop in industrial activity and falling demand for electric energy. It is worth mentioning that since 1991 the consumption of industrial consumers has shrank by 2.8 times and agricultural by 3.6 times (Hasanov, et al.,

[4] Shortened by the author

2011). The power sector suddenly found itself with huge excess of power generation capacity.

Figure 9: Comparison of Tariffs by Country (2006 tariffs)



Source: Kyrgyzstan: Power Generation and Transmission, Zozulinsky (2010)

After the independence taking into account low direct costs of using hydropower for energy production and the population's low standards of living, the government started promoting electric power as cheap substitute to more expensive imported oil products and coal.

According to the Act of the Kyrgyz Republic "On the power industry" tariffs in the power sector should not only provide for the full recovery of costs, but also certain profit margin in order to attract investments to the sector (Jogorku Kenesh

of the Kyrgyz Republic, 1997). The same act prohibits cross-subsidization between different categories of customers.

Figure 9 provides comparison of electricity tariffs in Kyrgyzstan with tariffs in other post-soviet countries, Eastern Europe and Turkey.

Yet the reality contradicts with both of the specified provisions of the law. Electricity tariffs in Kyrgyzstan (approximately 1.5 US cents per 1 kWh for residential consumers, 2,75 US cents – for commercial consumers) are constantly fixed rate tariffs, which are low by international standards and do not cover the cost of production (Zozulinsky, 2010). Current electricity tariffs for residential consumers are among the lowest in region. After the tariffs for residential users were more than doubled in early 2010 the electricity tariffs were reverted back to the old original level by the post-revolutionary Government of the Kyrgyz Republic. Please see Table 2 for preceding tariff raise, after raise and current electricity tariffs policy[5].

Tariffs for electric power and heat energy are pulled in opposite direction by

Table 2: Electricity Tariffs from 2009 - present day

Table 2.8—Electricity tariff trends in Kyrgyzstan (per kWh, 2009-2010)

	1 July 2009		*1 January 2010*		*1 April 2010*		*1 July 2010**
Users[68]	*In som*	*In $*	*In som*	*In $*	*In som*	*In $*	*In som*
Households	0.71	$0.017	1.50	$.034	0.7	$0.016	1.90
Industrial enterprises	1.09	$0.026	1.50	$.034	1.327	$0.029	1.90
Budget funded institutions	1.14	$0.027	1.50	$.034	1.327	$0.029	1.90
Agricultural users	1.09	$0.026	1.50	$.034	1.327	$0.029	1.90
Pumping stations	0.77	$0.018	1.50	$.034	1.327	$0.029	1.90
Other users	1.16	$0.028	1.50	$.034	1.327	$0.029	1.90

** Since annulled.*
Source: Press reports, UNDP calculations.

Source: Energy and Communal Services in Kyrgyzstan and Tajikistan: A Poverty and Social Impact Assessment, Slay B. 2011

[5] UNDP experts used exchange rate of 1 USD = 43.8 Kyrgyz soms

social acceptability and economic feasibility (Hasanov & Izmailov, Chapter 3: Kyrgyzstan's Power Sector, 2011). However, it is clear that current tariff policy is skewed much more in the direction of social policy. Low tariffs for residential consumers are subsidized by higher tariffs charged to other categories of consumers, e.g. commercial and industrial consumers; and revenue generated by exporting power to neighboring countries. However, the broad category of residential consumers obviously includes not only the poor and vulnerable households, but also more affluent people, who do not need any support from the state. Taking into account the straight-line rate electricity tariffs in Kyrgyzstan, not changing with the increase in the amount of power consumed, it is ironically so, that since more affluent people have higher living standards, they are likely to consume more power per capita and correspondingly benefit from subsidies more than poorer citizens (Izmailov, Karataeva, Mateev, Sultankulova, & Shigaibaeva, 2007). This is one of the most evident lapses in the effective tariffs policy.

Gradual deterioration of the power sector has long been ignored by the state. The policy of promoting use of electric energy as a substitute to other types of fuel was short-sighted for several reasons. First, it did not take into account limited transmission capacity and poor technical condition of the existing power distribution networks. Increased load of the equipment, especially during cold season, results in a large number of failures due to capacity overload and equipment breakdown. Second, low socially oriented tariffs covered only direct costs of production without realistic consideration of capital investments that would be needed for renewal of technical infrastructure. Inability to finance the reconstruction of quickly deteriorating technical infrastructure only leads to

further aggravation of the problem. Third, such policies helped to create the widespread belief about electric energy as of a very cheap and abundant good. As a result, many people seem to treat it as almost like 'manna falling from heaven', or type of goods costing next to nothing to produce. Such erroneous perception, shared by significant share of the Kyrgyz society, is likely to create difficulties for realization of any future initiatives by the Government to raise the households tariff in an attempt of bringing it closer to full cost recovery level.

According to the report by a consultancy firm, hired by USAID to carry out the analysis of power sector companies' operations, the prime cost of providing electric supply services at given unreliable quality level equals 0.99 Kyrgyz soms[6] (2.2 US cents) per 1 kWh, while prime cost, which would be adequate for provision of reliable and stable services throughout the year, was estimated to be

Table 3: Preliminary Estimates of the Prime Cost of Electricity

Table E-1: Preliminary Estimates of the Prime Cost of Electricity			
	Scenario 1	**Scenario 2**	**Scenario 3**
Level of Service Quality	Continuing unreliable deteriorating service	Restoring reliability of the existing power system	Ensuring reliable and secure electricity throughout the year and throughout the Republic
Prime Cost of Electricity	1.0 som/kWh, or 2.2 Cents/kWh	1.65 som/kWh, or 3.6 Cents/kWh	2.03 som/kWh, or 4.4 Cents/kWh
Revenue Requirement	8.7 billion som, or $190 million	15.0 billion som, or $326 million +$136 million*	19.1 billion som $415 million +$225 million*
* above Scenario 1			

Source: TetraTech Es Inc., Review of the Prime Cost of Electricity, 2011 (note: exchange rate used 1 USD = 46.0 som)

[6] *Kyrgyz som* is the national currency of the Kyrgyz Republic

around 2 soms (4.4 US cents) per 1 kWh (please see Table 3 below). Consultants calculated that such improvement of quality of service would be possible, if revenue of the power sector more than doubles, jumping from 190 million US dollars for current level to 415 million for the alternative improved services scenario (TetraTech Es, Inc., 2011).

The consultants rated current level of electric power supply in Kyrgyzstan as "unreliable" taking into consideration 12,578 power outages per year in 2010 or 34 per day (TetraTech Es, Inc., 2011). They argue: "… the attempt to continue operating the sector at this level of revenue under current management practices will result in a daily hardship and costs on the population, businesses and industry of the Kyrgyz Republic" (TetraTech Es, Inc., 2011). If present practices are to be continued, the overall energy security of the country will be at risk considering probability of a catastrophic breakdown (TetraTech Es, Inc., 2011).

Thus, low electricity tariffs in Kyrgyzstan is one of the major constraints for increasing revenues of the sector, which in its turn would allow increasing investments into technical infrastructure development. On the other hand, raising tariffs can be a double-edged sword (Slay, 2011). Without (i) improved management practices (particularly to reduce theft and losses); (ii) credible threat of disconnection for non-payment; (iii) effective public communications concerning the need for higher tariffs; and (iv) households' willingness to pay higher tariffs, energy tariff hikes can be ineffective or worse (Slay, 2011).

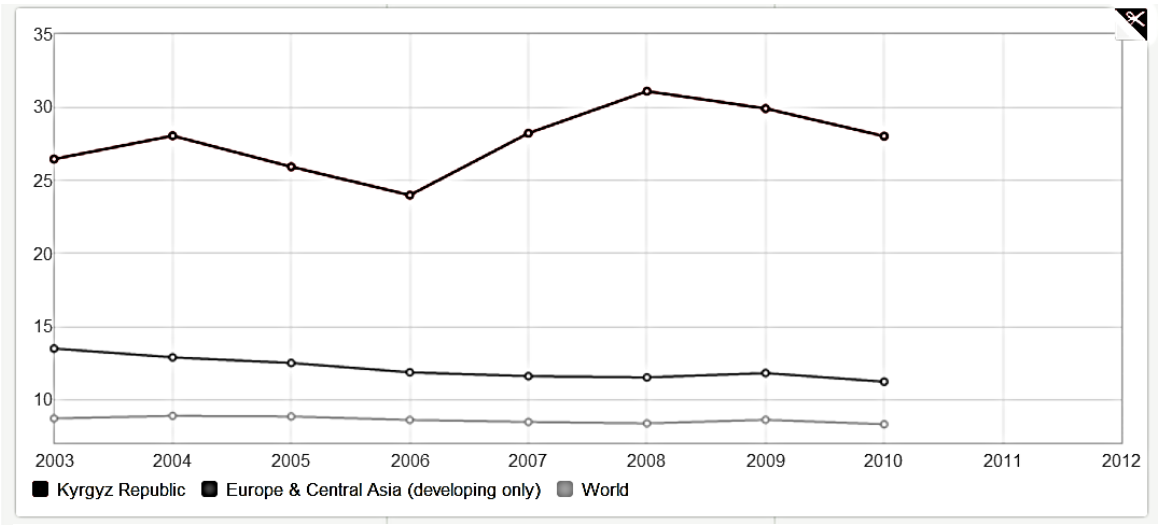
It is evident that current tariffs policy provides power companies with very modest profitability potential and is mostly socially orientated to provide political

stability in politically turbulent years after the revolution of 2010 (Hasanov, et al., 2011).

4.1.2 Losses of Electric Power

High system losses of power have long been one of the most devastating scourges of the Kyrgyzstani power distribution sector. For example, in 2007 total losses in the distribution sector equaled enormous 36.2 per cent of the total volume of energy inflow to networks of distribution companies.

Figure 10: Electric Power Transmission and Distribution Losses (% of output)



Source: World Bank data

Power losses include two components: technical and non-technical (commercial) losses. It is somewhat straightforward that *technical* losses stem from natural physical processes of electricity transportation and depend on quality of equipment used. As for *commercial* losses, these are losses, representing the

difference between volume of electricity actually provided to consumers and the volume, for which customers were charged for.

In recent years, as a result of the Government's pressure to improve efficiency in the power sector, overall losses in the distribution sector have been substantially reduced. Losses in generation and transmission sectors as percentage of total output were relatively stable in 2010 and 2011 and equaled 0.4 per cent and about 5.2 per cent respectively. Overall losses in distribution in 2010 accounted for 26.8 per cent and 22.3 per cent in 2011. However, overall losses in transmission and distribution in Kyrgyzstan (2009 – 30 %, 2011 – 28 %) remain very high compared to other developing countries in Europe and Central Asia (11 – 14 %), and especially to the world average (7 – 10 %). See Figure 10 for details.

For details on system losses of electric energy in the distribution sector for the period of 2009 – 2011 please see Figure 11.

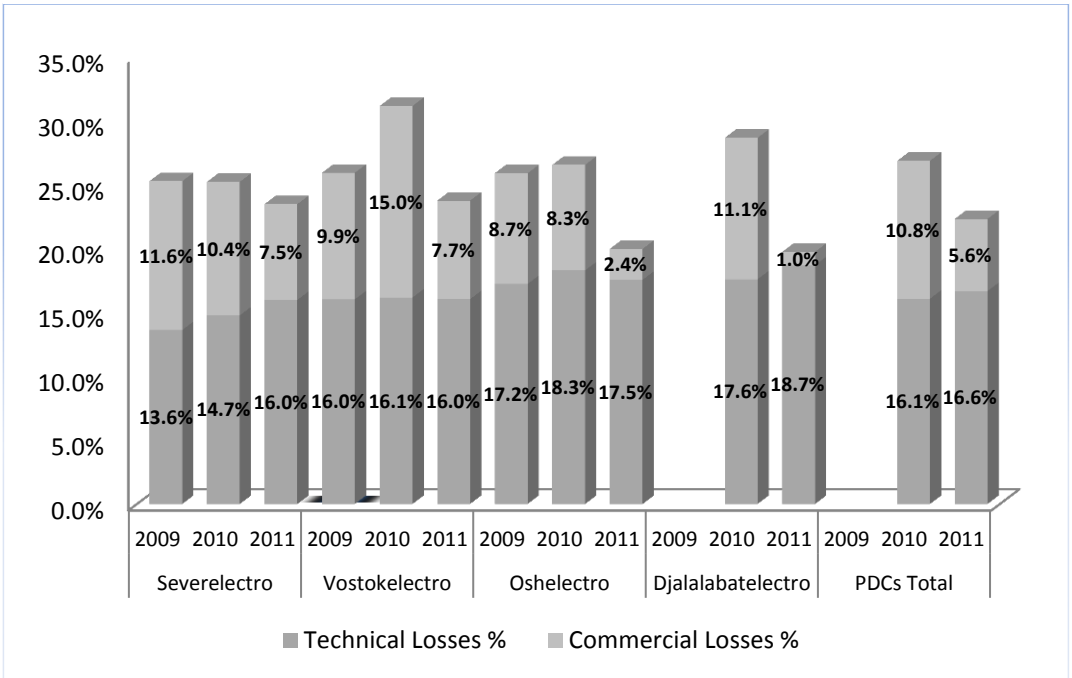
Technical Losses

Inefficiency problems stemming from technical aspects of regional power distribution companies' (PDCs) operations are common for all four companies. High technical losses are being justified by poor condition of equipment, which, reportedly, is a result of high level of technical wear and tear and lack of investments into development of technical infrastructure. The rate of wear in distribution network, which was mostly constructed about 30-40 years ago, is threateningly high for provision of the energy security. Rate of wear in "Severelectro" is assessed to be around 35,3 per cent, in "Vostokelektro" – 47,7 per cent, "Oshelektro" – 52,8 per cent and "Jalalabatelectro" – 53,4 per cent (Hasanov, et al., 2011).

Figure 11 reveals that in the period of 2009 to 2011 there was no reduction in technical losses. In fact, technical losses either rose or remained on about the same level like in "Vostokelektro". Especially noticeable was growth of the technical losses for two consecutive years in "Severelectro".

Poor technical condition of main equipment not only leads to high technical

Figure 11: Losses of Power Distribution Companies (2009 - 2011), %

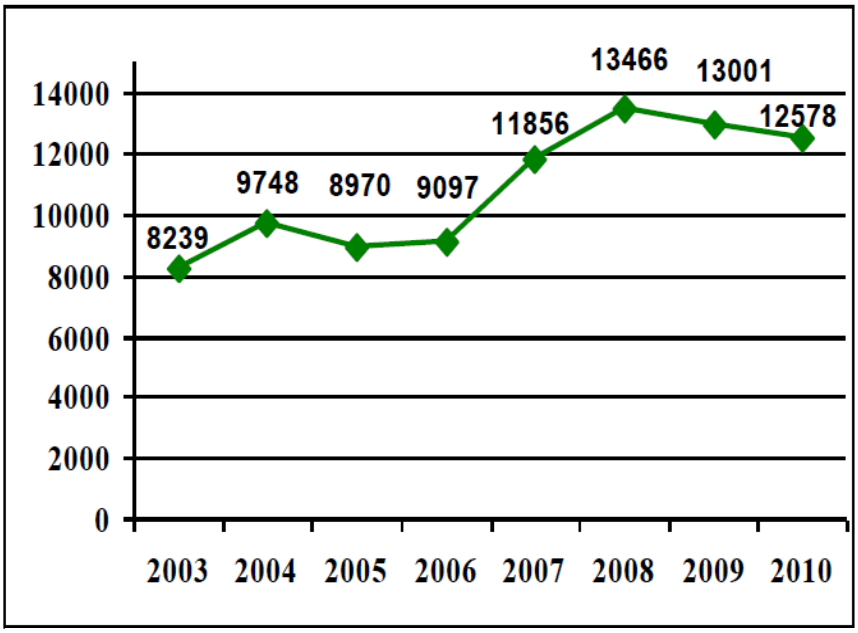


Source: 2010 and 2011 figures from MEIKR, 2009 figures from Hasanov et al. (2011)

losses, but also greatly reduces reliability of power supply resulting in increased number of blackouts and unstable voltage. Power consumption has been steadily growing recently, which, especially during cold season, causes overloads, leading to emergency outages and mass damages to distribution networks.

According to Tallapragada et al. (2009) number of outages per year is the main indicator of service quality from customer perspective. High number of outages registered in the power system of KR annually is an indication of low quality of power supply. Another aspect of service quality, not paid enough attention by the MEIKR and power companies, is voltage, which often is lower

Figure 12: Emergency Outages in the Distribution Sector



Source: Root Causes and Symptoms of the Kyrgyz Republic's Power Sector's Poor Condition (Hasanov, et al., 2011)

than specified standard of 220 volts. According to the MEIKR in 2011 about 90 per cent of consumers got power at lower than standard voltage, which might cause damage to their property (home appliances, equipment, etc.). Figure 12 illustrates the trend of increasing number of power outages in recent years, which can be attributed to overall deterioration of the PDCs' technical infrastructure. The peak number of outages in 2008 can be attributed to the impact of

anomalously cold winter and greatly increased consumption for heating purposes, which caused massive overloads and outages in distribution networks.

Neither power companies, nor the Government of the Kyrgyz Republic were successful in raising funds necessary for modernizing energy generation, transmission, and distribution facilities and bringing them to conditions, which would be adequate for ensuring energetic security of Kyrgyzstan. The situation, as has already been stated, is aggravated by effective tariff levels and regulatory legal base.

Commercial Losses

At certain stage in the past the Government made decision to introduce the concept of "commercial losses". This step was made to create a credible basis to be used by power distribution companies to account for losses, resulting from unauthorized use/pilferage of electricity. At the same time, by doing so the Government created additional opportunity for rent-seeking activities in the sector, which currently has the reputation of being deeply permeated by corruption and rent-seeking.

Commercial losses still account for significant share of overall losses of energy, despite good results in their reduction achieved in recent years. Commercial losses showed sharp decrease from 2010 to 2011 for PDCs as a whole. Except for "Vostokelektro", which reported huge increase in commercial losses in 2010 with sharp reduction in 2011, commercial losses in the other three companies decreased. "Oshelektro" and "Djalalabatelektro" reported huge reduction in commercial losses in 2011 from 8.3 to 2.4 and from 11.1 to 1.0 per cent respectively.

It can be seen from the Figure 11 above that reported technical losses considerably exceed commercial losses. Experts argue that such high technical losses are unlikely to be true, even considering current poor condition of distribution networks (Hasanov, et al., 2011). They suggest that distribution companies are likely to report certain share of commercial losses as technical. It might be because reduction of commercial losses was given higher priority by controlling government bodies, implying more responsibility for PDCs' managers for reducing commercial losses than technical (Hasanov, et al., 2011).

Hasanov et al. (2011) describes results of internal inspections of PDCs, which revealed many violations in the period from 2003 to 2010. The violations included making artificial customer records in the billing system not backed by service contracts. It was done in order to decrease reported losses and inflate sales. In "Severelectro" in the period from 2003 to April 2010 such manipulations amounted to the total of 473.7 million kWhs

Hasanov et al. (2011) suggest that another reason for high commercial losses is inaccurate customer databases and unsatisfactory efforts of sales and billing departments' staff.

4.1.3 Financial Results

Power distribution companies have been delivering poor financial performance since unbundling of "Kyrgyzenergo". Figure 13 below illustrates overall trend of the power sector enterprises' profitability in recent years.

Low tariffs, high losses and inability to provide full collection of tariff are main causes of the power distribution companies' lackluster financial results. The

gap between accounts payable, which are the result of failure to provide complete collection of tariff, and accounts receivable keeps increasing ever since the former exceeded the latter in 2003. Continuation of this trend lowers liquidity of power sector enterprises and threatens overall financial stability of the sector.

Representatives of power sector companies tend to emphasize low tariffs as the primary cause of poor financial situation. Yet experts have a different opinion, arguing that poor financial performance and losses of the distribution power companies were the result of many factors besides low tariffs, including ineffective management, embezzlement, pilferage of electricity, etc. (Hasanov, et al., 2011).

According to the MEIKR data in 2010 all PDCs showed losses with the aggregate losses equaling 205 million soms. In 2011 three companies "Oshelektro", "Vostokelektro" and "Djalalabatelektro" substantially improved financial performance and reported profits. Such dramatic change can be partially explained by meaningful decrease of losses. However, the largest PDC "Severelectro" reported much worse results with losses of 173.8 million soms. For more details on PDCs' 2010 – 2011 profitability performance please see Appendix 3.

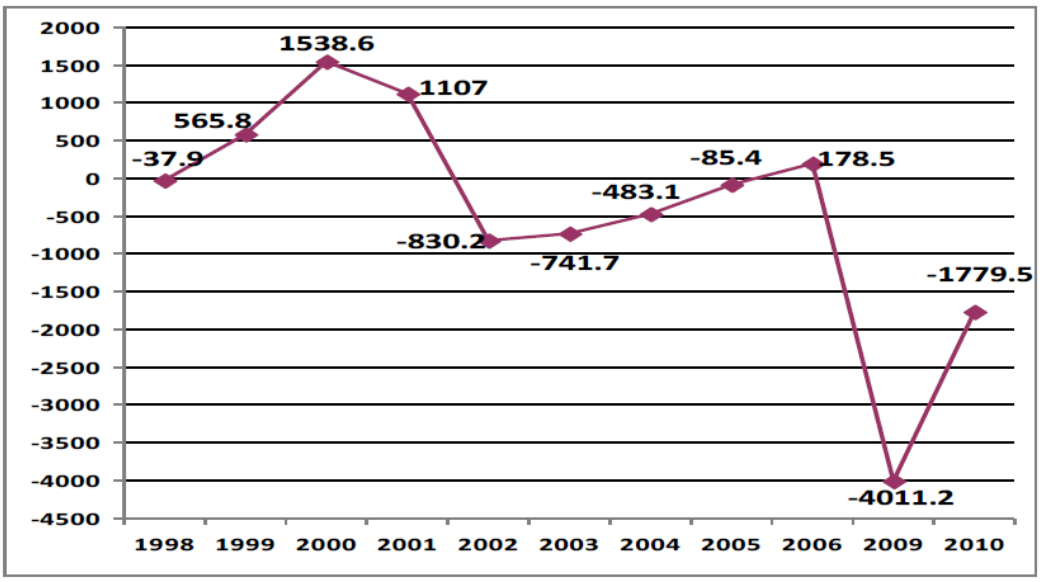
Collection of Payments

Incomplete collection of payments poses a significant threat for financial stability of the power sector and the sector's future development prospects. The chain starts with some customers not paying for electricity. Distribution companies' inability to collect service fees to the full extent adversely affects their financial performance and creates problems with timely settlement of distribution

companies' credit and tax obligations before the state budget (Slay, 2011). However, it also dramatically affects their partner companies, including the upstream generation and transmission company. Poor collection leads to accumulation of massive accounts payable and accounts receivable and weakens cash flow of not only PDCs, but also generation and transmission companies.

Table 4 below illustrates the results of payment collection for the period 2009 – 2011. It can be seen that collection of payments is unsatisfactorily low. The aggregate collection ratio for all PDCs in 2010 equaled to 90.7 per cent and in

Figure 13: Aggregate Profitability of the Power Sector Companies, (mln. soms)



Source: *Root Causes and Symptoms of the Kyrgyz Republic's Power Sector's Poor Condition*, Hasanov et al. (2011), Soros Foundation Kyrgyzstan

2011 to 93.6 per cent. Based on this we can conclude that in general PDCs managed to improve their collection in the specified period. At the same time, it can be seen that every regional PDC has its problematic customer groups, where collection level is very low compared to other PDCs. For example, "Severelectro"

has unacceptably low collection ratio for its industrial category of consumers, which was below 60 per cent both in 2010 and 2011, for "Vostokelektro" - agricultural consumers with collection of 46 per cent in 2010 and horrible 17 per cent in 2011. "Oshelektro" has a very low collection rate from agricultural consumers as well, equaling to 57 per cent in 2010 and 70 per cent in 2011. For "Djalalabatelektro" the most problematic is the households' category with the collection rate of 68 per cent in 2010 and 86 per cent in 2011. It should be noted that providing high collection rates for households is problematic for all PDCs. But achieving good payment collection in this category is very important, because households consume about 60 per cent of the whole domestically distributed volume of energy. As indicated by the data in Table 4 below, in 2011 all PDC managed to yield positive results in improving households' collection rate.

From Table 4 we can see that incomplete collection of payments can

Table 4: PDCs' Payment Collection Ratios (2010 - 2011)

COLLECTION RATIOS											
		Severelectro		Vostokelectro		Oshelectro		Djalalabatelectro		PDCs Total	
		2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
OVERALL COLLECTION, as % of sales	%	**94.5%**	**98.0%**	**88.8%**	**86.5%**	**86.3%**	**90.8%**	**83.5%**	**90.1%**	**90.7%**	**93.6%**
Industrial	%	58.8%	58.0%	98.7%	92.0%	105.3%	100.3%	100.9%	97.4%		
Government Institutions	%	105.1%	97.0%	98.1%	102.3%	112.1%	112.9%	95.7%	85.7%		
Agricultural	%	106.4%	114.0%	46.2%	16.6%	57.8%	70.5%	218.6%	159.3%		
Households	%	**89.4%**	**95.0%**	**82.7%**	**91.9%**	**81.1%**	**85.7%**	**67.7%**	**86.1%**	**84.0%**	**91.3%**
Other consumers	%	129.8%	136.0%	85.1%	83.4%	65.3%	80.0%	84.6%	90.9%		
Expected Increase in in Accounts Receivable (Sales less Collection)	thous.som	**192,710**	**93,302**	**100,878**	**138,987**	**166,230**	**126,098**	**139,918**	**94,224**	**599,736**	**452,611**

Source: The MEIKR calculations (data provided in spreadsheets)

accumulate to big amounts, representing the increase in PDCs' accounts receivable. In 2010 the difference between sales and collection volume, which would be expected to cause an increase in accounts receivable, equaled to 599.7 million soms, which is about 12.4 million USD[7], and in 2011 to 452.6 million soms or 9.35 million USD.

Hasanov et al. (2011) argue that one of the main causes for poor payment discipline of population is their attitude towards electric power. Many consumers still do not perceive electric power as a commodity requiring payment for the right to use it like other goods, such as, for example, food or gasoline (Hasanov, et al., 2011). Therefore, they are likely to put the payment off until other more urgent obligations are taken care of. Experts also blame PDCs staff for their inability or unwillingness to make best efforts to provide for the timely payment of the bills, to take timely actions to cut-off not- paying customers and effectively claim the debts via court trials (Hasanov, et al., 2011).

Disconnection for non-payment is an important mechanism for improving collection of payments (Tallapragada et al., 2009). In this regard, it has to be noted that the PDCs' ability to use disconnections of non-payer customers (including debtor government entities) from the grid as a disciplinary measure is seriously hampered by resistance to it by government entities, local municipalities, law enforcement agencies and other politically influential groups (TetraTech Es, Inc., 2011). Example of "Vostokelektro" can be used for illustrating this effect. As of December 2010 56.4 per cent of "Vostokelektro"

[7] Official National Bank of the Kyrgyz Republic exchange rate as of June 13, 2014 - 1 USD = 48.42 Kyrgyz soms

customers had debts, but only 2 per cent of debtors were disconnected (TetraTech Es, Inc., 2011). Such interference on part of the abovementioned parties seriously affects efficiency of tariff collection; hence financial performance of the PDCs deteriorates.

It is important to note that in Kyrgyz energy system companies, representing different functional stages like generation, transmission and distribution, do not pay each other directly. According to the existing payment collection and distribution mechanism regional power distribution companies are not directly responsible for collecting and managing cash payments. After PDCs' issue invoices to end users the latter can pay for power at banks, post offices, etc. Collected payments are eventually transferred to escrow accounts opened in major state bank and divided among the companies by percentage shares set monthly by the "Regulator" (Hasanov & Izmailov, Chapter 3: Kyrgyzstan's Power Sector, 2011). Under this scheme of financial settlements PDCs seem to, in a way, borrow electricity from the generation company and services of transportation from the transmission company with the promise to pay when customers pay them. This effectively means that the generation and transmission companies share the risk of not getting paid on time and in full, and are totally dependent on the PDCs effectiveness in ensuring timely and complete collection of tariff. **As** can be seen, proportions of cash allocation among power sector enterprises, defined by the "Regulator", have immense importance in providing the companies' cash flow positions.

Accounts Receivable and Accounts Payable

Poor collection of electricity tariff is the reason, leading to building up of PDCs massive accounts receivable and accounts payable. According to the MEIKR by the end of 2009 PDCs accumulated accounts receivable in the amount of 2,379 million soms. Households share was 1684 million or almost 71 per cent of the total. At the same time PDCs owed 3,700 million to the generation and 1,638 million soms to the transmission companies. We can see that accounts payable substantially exceed accounts receivable in the total amount. For details on PDCs' accounts receivable and payables please see Appendix 4.

In the beginning of 2010, soon after the controversial privatization of "Severelektro" and "Vostokelektro", the Act # 16 of Jan. 28th, 2010 (Jogorku Kenesh of the Kyrgyz Republic, 2010) was enacted ostensibly with the goal of stabilizing and supporting financial standing of power sector companies by writing off bad debts. Following adoption of the act, a total of 1,760 million soms were written off from PDCs' accounts receivable as bad debts. But even more impressing 2,053.6 and 451.3 million soms were written off from accounts payable to the generation and transmission companies respectively. Experts argue that the Government's acceptance of regularly writing off significant shares of the PDCs' accounts receivable and accounts payable not only negatively affects the generation and transmission companies, but also significantly weakens incentives of power companies' managers to exert more efforts to improving the tariff collection rate (Hasanov, et al., 2011).

In 2010 and 2011 both accounts receivable and accounts payable continued to grow. Based on the MEIKR data, provided in Appendix 4, we can calculate that after deduction the amount written off in accordance with the Act in 2010

accounts receivable increased by 560.4 million soms and in 2011 by 315.5 million (PDCs' reports based). Looking at the table in Appendix 5, it becomes clear that as expected increases in accounts payable were the result of low tariff payment discipline of population. Actually calculations of the expected increase in accounts receivable, based only on collection rate, provide for even more impressive increases equaling to 599.7 million in 2010 and 452.6 million soms in 2011.

As we saw increasing accounts payable lead to increase in accounts payable to generation and transmission companies. However, we can also see that scale of effect that PDCs' increasing accounts receivable (AR) had for increasing their accounts payable (AP) to the generation and transmission company in 2010 and 2011 was not constant. For instance, in 2010 when AR increased by 560.4 million soms AP to the generation company increased by 112.6 million USD, which equals to 20 per cent of the increase in AR. In 2011 the AR rose by 315.5 million soms, AP rose by almost 46 million or 14.5 per cent of the increase in AR. However, for the transmission company interrelation with the PDC's AR increase is different. In 2010 the PDCs accounts payable even decreased by 10.4 million soms, despite meaningful increase in AR, and in 2011 AP increased by 84.4 million soms, which equals to staggering 27 per cent of the PDC's 315.5 million soms AR increase. Such controversial results can probably be explained by the "Regulator's" making drastic changes in proportions of tariff payment funds, which are collected and accumulated in escrow accounts, allocated to the transmission company. If this is true, then this example would illustrate that the

"Regulator" has significant regulatory power, enabling it to influence the financial condition of power sector enterprises.

At the same time it is evident that most of the PDC's accounts payable to the generation and transmission companies cannot be paid out of accounts receivable, since the former usually exceed the latter. At the end of 2011 PDCs had 1495 million soms of accounts receivables, which corresponded to 2,857 million soms of accounts payable to the firms mentioned above. Looking at the whole picture, we can conclude that it is probably inevitable that in near future some writing off will be needed again.

Table 5 below shows accounts receivable in days calculated for the Kyrgyzstani PDCs. As we can see there is significant difference in the days of sales outstanding between PDCs. The best performance is provided by

Table 5: Accounts Receivable in Days (DSO, days)

		Severelectro		Vostokelectro		Oshelectro		Djalalabatelectro		PDCs Total	
		2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
DSO	days	22.9	28.0	112.8	103.1	147.3	165.8	82.0	110.9	66.5	76.7

"Severelectro" with only 22.9 days in 2010 and 28 in 2011, while the worst by "Oshelektro" with correspondingly 147.3 and 165.8 days. These DSO figures will be compared to indicators of electric utility companies in countries of Sub-Saharan Africa (SSA), many of which are low income countries like Kyrgyzstan. This comparison is provided just to give us the general idea on comparative performance of Kyrgyzstani companies. According to Tallapragada et al. (2009)

the best performers among SSA countries in 2004 – 2006 had DSO below 60 days, mean was 117 days and median figure equaled 75 days. We can see that DSO of the whole distribution sector in Kyrgyzstan with 66.5 in 2010 and 76.7 in 2011 is worse than the best SSA countries'. At the same time, we should not forget that DSO results in 2010 were calculated using accounts receivable figures after the massive writing-off took place in the beginning of the year, meaning that results would be much worse had it not happened. This probably is sufficient for drawing a conclusion that PDCs' financial performance can be defined as inefficient.

In must be reiterated that inability of PDCs to repay the debt to the "upstream" companies, caused by poor collection of electricity tariff, greatly weakens their financial position. This in its turn does not allow them to repay their obligations on foreign credits and before the state budget, not even mentioning necessity to make capital investments needed to replace worn-out and outdated equipment.

4.2 Rent-seeking in the Power Sector

4.2.1 Distribution of Political Power in Kyrgyzstan

As was mentioned earlier distribution of political power in an economy is the main factor defining who will win and lose in distribution contest (Khan, 2000).

Engvall in his study conducted in July 2011, a year after the revolution of 2010, characterizes political power in Kyrgyzstan as a battle between clans headed by strong political personalities (Engvall, 2011). It is suggested that elites

compete through informal patron-client pyramid networks, which are based mostly on kinship, friendship and mercantilistic considerations. It can be argued that origins of such political structure with many clan-based patron-client networks competing for power are rooted in the pre-Soviet history of the Kyrgyz people (Engvall, 2011). Before Soviet Union the Kyrgyz were represented by a big number of independent tribes each governed by its own chief, who was responsible for settling disputes among his tribesmen and regulating judicial and territorial issues with rival tribes. Despite Soviet Union's attempts to loosen tribal and kinship system, old identities were not completely erased (Engvall, 2011).

Engvall (2011) emphasizes the overwhelming importance of greed as the primary driving force for competing political factions, while ideology and other motives are presented as having much less priority. Three factors are highlighted as defining the balance of political power in Kyrgyzstan (Engvall, 2011). First one is defined by proximity to ruling elite, which guarantees better protection of property rights as compared with the judicial system as long as agents maintain close relationships with patrons. Second, the system is based on controlling rents and requires close connections between political and business worlds. As stated by Engvall (2011) state is itself a vehicle for earning meaningful social status and material wealth. Third, the state is organized as a marketplace with the following arguments provided by Engvall (2011) as support to this statement. Administrative and political posts are considered as investments with bribes serving as return on investments. Due to volatile political situation, incumbent holders of lucrative positions cannot be sure of the duration of own tenure and therefore try to maximize return on investment in the shortest time possible. In its

turn, salability of positions in public service inevitably causes decline in the quality of governance. The population's access to public goods, which effectively become private under these settings, is severely restricted. Finally, Engvall (2011) argues that economic growth and state treasury suffer from the outflow of funds, which could potentially be channeled into productive activities, into the patron-client networks.

Before the revolution of 2010 the former President, Kurmanbek Bakiev, and his family members succeeded in establishing almost totally authoritarian political and economic control, which caused widespread unrest finally leading to the events of April 2010. After the revolution the interim government tried to prevent the repetition of scenario, in which it was possible for a small group of people to usurp total power, by adopting a new Constitution that provides for significant curtailing of the President's functions with simultaneous strengthening of the Parliament's role (Djuraev, 2012). For instance, in accordance with the new Constitution, the President lost the right to appoint and dismiss ministers, heads of local governments, to influence domestic economic policy, etc. (Djuraev, 2012). The new Constitution also stipulates that no political party can get more than 65 seats in the 120-seat parliament, and requires formation of a coalition to amass the majority, if there is no single party with majority control.

Parliamentary elections held in October of 2011 resulted in five parties' getting seats in the Parliament in proportions requiring not less than three of those to form a coalition (Djuraev, 2012). Although in the beginning of the Parliament's operation there were some difficulties experienced in finding a consensus between

members of a ruling coalition, whose composition changed a couple of times, the Parliament seems to be capable of functioning under the new mode.

Based on the relatively smooth functioning of the new political order, Djuraev (2012) concludes that eradication of the monopoly over political power was successful and suggests that the new political system can be sustained. According to Djuraev (2012), several factors have important influence on the division of power under current arrangement. These factors are social and political fragmentation and the interests of predatory political and business elites. In Kyrgyzstan political fragmentation is based on strong connections between political leaders and their local constituencies (Djuraev, 2012). He states (Djuraev, 2012) that political and business elites maintain close clientelistic relationships with particular localities (often their hometowns as well as electoral districts). Another dimension of political fragmentation emphasized by Djuraev (2012) is regional. This is demonstrated by difference in the number of votes each political party won in different regions. Some parties were dominant in southern regions, while other parties in northern; some demonstrated better results in urban areas as compared to rural, etc.

Djuraev's (2012) definition of the political and business elites as predatory is based upon the argument that these elites consider the state as a source for extracting personal gains. The state is described as an investment market, allowing for purchase and sale of certain potentially lucrative government posts (Djuraev, 2012).

It is suggested that revolutions of 2005 and 2010 happened because of successful efforts of former Presidents' Akaev and Bakiev to create single

dominant pro-presidential parties, thus limiting access to "state resources" for other powerful political players (Djuraev, 2012). Djuraev (2012) argues that the new mode of multiparty parliament and coalition government can be sustained as, in this context, it can provide certain level of access to public resources to many political elite groups, thus allowing for balance to be maintained.

On the whole, the author strongly agrees that definition of contemporary political system of Kyrgyzstan provided by Djuraev (2012) using Carothers' term "feckless pluralism" accurately reflects today's reality. Carothers (2002, p. 10) wrote:

> Countries whose political life is marked by feckless pluralism tend to have significant amounts of political freedom, regular elections, and alternation of power between genuinely different political groupings. Despite these positive features, however, democracy remains shallow and troubled. Political participation, though broad at election time, extends little beyond voting. Political elites from all the major parties or groupings are widely perceived as corrupt, self-interested, and ineffective. The alternation of power seems only to trade the country's problems back and forth from one hapless side to the other. Political elites from all the major parties are widely perceived as corrupt, self-interested, dishonest, and not serious about working for their country. The public is seriously disaffected from politics, and while it may still cling to a belief in the ideal of democracy, it is extremely unhappy about the political life of the country. Overall, politics is widely seen as a stale, corrupt, elite-dominated domain that delivers little good to the country and commands equally little respect.

> And the state remains persistently weak. Economic policy is often poorly conceived and executed, and economic performance is frequently bad or even calamitous. Social and political reforms are similarly tenuous, and successive governments are unable to make headway on most of the major problems facing the country, from crime and corruption to health, education, and public welfare generally.

Based on the abovementioned arguments, we can conclude that political power in Kyrgyzstan is fragmented and divided between many competing patronage networks, which, in the first place, pursue own mercantilistic interest and view state as a source for self-enrichment (Engvall, 2011).

4.2.2 Corruption and Illegal Activities in the Power Sector

In recent years, corruption in the power sector was one of the most frequently discussed issues in Kyrgyzstan, which ranked 154th least corrupt country from the total of 174 positions in the Transparency International's Corruption Perceptions Index of 2012. Experts argue that the power sector is a fertile field for vast unlawful rent-seeking activities by employees of power companies and staff of related government agencies (Anti-corruption Business Council; Fuel Energy Sector Transparency Initiative; Non-government Ecological Foundation "Unison", 2012).

Corruption in the power sector has serious negative implications for performance of the power sector enterprises, financial interests of the Government, overall economic growth, and is one of the main causes that brought about the stagnation of the industry (Anti-corruption Business Council; Fuel

Energy Sector Transparency Initiative; Non-government Ecological Foundation "Unison", 2012). Hasanov et al. (2011) and Izmailov et al. (2007) argue that corruption in the power sector negatively affects three parties: *bona fide* customers, who duly pay for electricity, but cannot enjoy satisfactory quality of service; *companies of the power sector*, which cannot provide quality services because of their inability to collect payments in full; *state budget*, which does not receive foregone dividends and taxes. Engvall (2011) argues that power industry is one of the few sectors of the Kyrgyz economy with the largest potential for rent-seeking activities. And exactly because of the scarcity of such lucrative resources competition for controlling rents in the sector and corruption are more destructive than in some resource-rich neighboring countries (Engvall, 2011).

Rent-seeking and corruption in the power sector especially blossomed during Bakiev's rule, whose family, besides the power sector, established control over all major sources of illegal rents and lucrative unlawful activities in the country, which are gold mining, banking industry, government institutions, providing access to loans and grants allocated by international financial organizations and donors, etc.

Mr. Bakiev's family under his presidency reaped substantial profits from closely controlling the power sector. However, it is believed that illegal activities are maintained even after the revolution, although at a smaller scale, taking into account the declared priority of eradicating corruption and increasing transparency in the sector. Some experts estimate that annually about 100 million USD (1.6 per cent of GDP in 2011) still leak away from the sector due to corruption and inefficiency (Anti-corruption Business Council; Fuel Energy Sector Transparency

Initiative; Non-government Ecological Foundation "Unison", 2012). Others announce a little less impressive, but still significant 30 million USD (Engvall, 2011). Therefore, it is not surprising to see different political factions compete for the right to control such a lucrative sector of the economy. The fact that since April 2010 four ministers (one of them was appointed to the post twice), representing different political parties, already have been appointed to head the MEIKR can manifest to the fierce competition for this senior position. One of those four ministers had to resign voluntarily in the middle of the scandalous court trial on charges of importing radioactive coal.

It has already been mentioned that some authors argue that it is a common practice to sell and buy posts in Kyrgyzstan. Engvall (2011) suggests that such post-trading has a pyramid structure, in which the rights to sell subordinate positions are delegated down the ladder. It is argued that this practice is spread to SOEs providing lucrative rent-seeking opportunities in such sectors as electric utilities, mining, telecommunications, etc. (Engvall, 2011).

Hasanov et al. (2011) claim that political leaders use their power to appoint “own” people to top management positions in the SOEs not hoping to get immediate financial returns, but rather to strengthen own political standing and to get the opportunity to provide employment to other closely affiliated people. Thus newly appointed top managers start their tenure with objectives that diverge from those of the company.

Rent-seeking Activities Peculiar to the Power Sector

Report on the energy system corruption issue, jointly prepared by several NGOs, lists the following as the most frequently encountered kinds of legal

offences, which were described by other experts as well (Anti-corruption Business Council; Fuel Energy Sector Transparency Initiative; Non-government Ecological Foundation "Unison", 2012; Hasanov, et al., 2011):

- procurement of goods and services at overestimated prices, including payments for services, which were not actually provided;
- illicit manipulations of customers database and billing related data (for example, decreasing readings of electricity meters as a result of collusion between customers and controllers, creating accounts to the name of non-existing consumers, etc.);
- chartering equipment at groundlessly low charges;
- blackmailing customers for fabricated breaches of the service contract terms;
- writing off accounts receivable and accounts payable without supporting documents, etc.

Chapter 5: Discussion

5.1 Analysis of Rent-seeking Organization in Kyrgyzstan

Analysis based on the description of main characteristics of political power distribution, distinguished by Engvall (2011) and Djuraev (2012) earlier in the text, allows drawing the following main conclusions about unique political structure of Kyrgyzstan.

Political power distribution contest in Kyrgyzstan involves many fragmented political clan-based factions led by wealthy politicians and oligarchs. They compete for acquiring dominant positions on the political scene, which would allow them to use the state as a source for extracting rents for themselves and members of their clans. In this setting, money is used to buy political influence, which in turn is used as a mechanism for reaping rents from the state and protecting own property rights.

Political situation can be balanced by providing all major factions with some access to public resources. Understandably, in any case the biggest winners of the distribution contest in current parliament-dominated structure are factions, belonging to the ruling coalition. However, it can be seen that even opposition parties, not belonging to the ruling group of factions, can still have a small share of the pie. It can be allocated to them in the form of government posts or opportunities to win rents, as a tradeoff for their agreement to maintain political stability.

When discussing rent-seeking in Kyrgyzstan, the first thing to note might be that it is difficult to find examples of any types of rents other than politically organized transfer rents. According to Khan (2000) in many developing countries redistribution of income is needed for maintaining political stability. After the events of April 2010 Kyrgyzstan can serve as the best illustration for correctness of this statement. From our theoretical discussion we know that transfer rents can only be effective, if they result in "primitive accumulation", leading to creation of capitalist class and not in theft and wastage. It is not the case in the real world Kyrgyzstan, where we see that oligarchs and wealthy politicians struggle to seize power simply to create rents for themselves and their supporters, who represent mostly middle and upper-middle class, allowing only insignificant share to be sacrificed in transfers to the poor for maintaining political stability, which is needed to continue the self-enrichment process.

Rents are extracted mainly through controlling the allocation of public budgets, exercising power to influence distribution of lucrative posts in the government, public service institutions, local governments and state-owned enterprises in certain profitable sectors with the highest rent-extracting potential.

5.2 Major Stakeholders and Rents

Discussion of rent-seeking activities in the power sector and their effect on the performance of electric power companies requires defining major stakeholders of the power sector, who enjoy different types of rents, and the way those parties interact with each other in the political economy context of the Kyrgyz power sector. The analytical method used in this section draws on the method used by

Suzuki (2001) for analyzing the effect that Indian political structure had on allocation of resources and rent-seeking activities in the unique political economy of the Indian power sector.

Politicians

As we saw in the previous section in Kyrgyzstan political power and business are closely interlinked. Business (material wealth) allows gaining political influence, which in turn provides protection and connections necessary for doing business successfully. Political power gives politicians rights to influence distribution of lucrative posts in the government, public service and state-owned enterprises, hence possibly creating a channel for extracting rents.

In exchange for providing one set of clients with access to top level managerial positions in the power sector SOEs, politicians (patrons) can extract rents possibly in the form of capacity to provide employment in the SOEs to other constituencies (another set of clients), possibly in the form of bribes from both sets of clients and also ability to force SOEs to follow policies, which would be in line with patrons' political objectives.

Allocating managerial positions in the power sector SOEs in this fashion results in the low quality of management, because decisions to fill high-level managerial positions are made either through bribing mechanism or based on candidates' allegiance to certain clan-based patron-client networks. Low quality of management is finally reflected in lower operational and financial performance of the power sector enterprises.

Those professionals in the power sector, who pay bribes to their patrons, consider those bribes as investments and act accordingly to maximize return on

investment. Rents, enjoyed by the power sector professionals, and implications they have for efficiency of the power sector companies are discussed below.

Consumers

Politicians can use political power to organize transfers to voters in order to maintain political stability and to maintain or strengthen own organizational power, which can be critical for winning distributive contests (Khan, 2000). Also politicians in Kyrgyzstan can use resources, possibly accumulated as a result of previous rounds of rent-seeking activities, for buying political influence by bribing voters.

In the power sector such redistributive rents are provided in the form of low electricity tariffs for residential users, which are subsidized by higher tariffs for other categories of consumers, electricity export revenues, and soft loans, issued to the power sector SOEs by the Ministry of Finance of KR. Tariffs for residential users are set far below full cost recovery level and therefore can be considered one of the reasons of poor financial performance of the power sector SOEs. These redistributive transfer rents are provided at the expense of the companies and state treasury and could be reflected in foregone profits, dividends and taxes.

Notably, almost all voters are at the same time consumers of electric energy, since 98 per cent of population has access to electricity services.

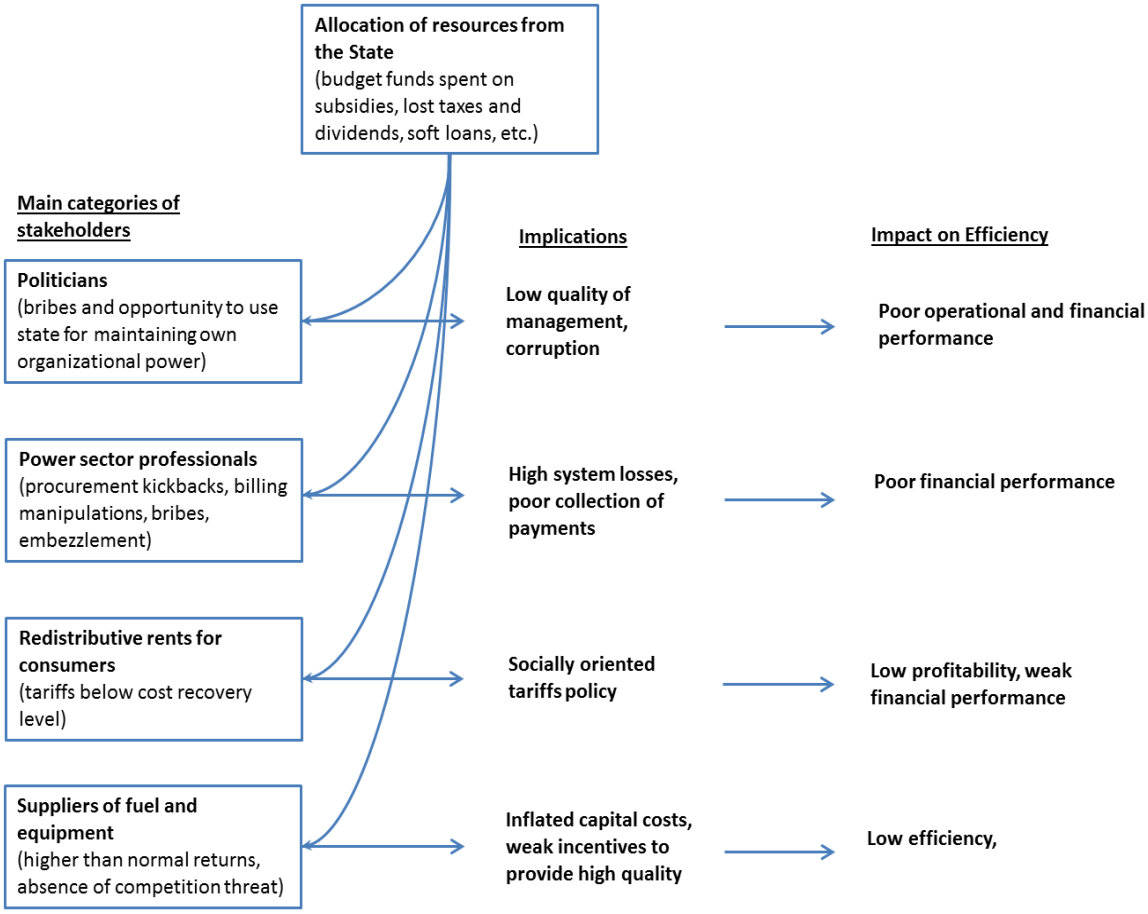
Industry Professionals

In the pyramid structure of informal patron-client networks the top level industry professionals' rent-seeking inputs come in the form of bribes to their patron politicians to ensure employment. Rents they seek ostensibly come in the

form of kickbacks on procurement and equipment chartering contracts, as well as bribes from own clients (lower level employees) down the informal patron-client pyramid.

Lower level employees are involved in illicit activities, related to falsifying customers' billing details, the most frequent one being collusion with customers to

Figure 14: Rents in the Power Sector and Implications for Efficiency



decrease reported readings of electric meters. In these cases both colluding parties accrue rents at the expense of the PDCs. As stated in the report by Tetra Tech Es.

Inc. (2011) PDCs employees are likely to falsify billing data to hide the amount of energy lost due to collusion with consumers by either inflating technical or commercial losses, or increasing accounts receivable, which are allegedly to be paid by the least reliable customers.

Rent-seeking activities of power sector professionals result in high commercial and technical losses, which directly affect performance of the PDCs.

Suppliers of Fuel and Equipment

Corrupt professionals of the power sector enterprises collude with a limited number (oligopolistic market) of suppliers of fuel and equipment in order to conduct unfair tenders and auctions for procuring fuel and equipment. It can be argued that for the suppliers to have sufficient incentives to engage in such unlawful activities higher than normal rate of return might be needed. Also by regularly cooperating with the power sector professionals, suppliers can enjoy the advantage of operating in what effectively is either a monopolistic or oligopolistic environment with decreased competition or elimination of it altogether. The downside of such setting for the power sector is in the suppliers' lack of incentives to provide high quality of fuel and equipment supplied. Already mentioned is the example with supplying radioactive coal for use in the Bishkek TPP.

Outcomes of the rent-seeking activities by the power sector professionals and suppliers of fuel and equipment are inflated capital costs and poor quality of fuel and equipment, which adversely affect productivity and financial performance of the power sector.

5.3 Implications of Rent-Seeking for Social Welfare

5.3.1 Inefficient Rents for Politicians and Power Industry Professionals

It can be argued that significant share of rents, created and maintained by the stakeholders of the power sector are "inefficient" rents, representing resources withdrawn from production function altogether, thus possibly causing damages to overall social welfare. The reason is that, as was mentioned by Engvall (2011), in Kyrgyzstan with its low 'rule of law' the most effective means of protecting own property rights is political power, which means following loss of the political power individuals also lose the ability to protect own property rights. Taking into account that in developing countries significant wealth in many cases is built by means of illegal mechanisms, it is not surprising that such individuals are concerned about the possibility of their property rights being raided by the next wave of power-holders. With many politically active patron-client networks currently participating in the political power distribution contest in Kyrgyzstan the overall political situation cannot be defined as stable.

These might be the reasons, why in developing countries many politicians or political entrepreneurs are likely to avoid investing in long-term assets, preferring keeping money in foreign banks or investing into higher liquidity assets. Family members of the former Presidents Akaev and Bakiev, living a luxury life abroad ostensibly spending money deposited in Swiss banks or the former Minister of Energy, Mr. Balkibekov, who allegedly bought an island in the UK giving him the guarantee of becoming ineligible for extradition to Kyrgyzstan, can be used as examples of such probably typical behavior for

corrupt rent-seekers from developing countries. Such people prefer keeping funds in places not easily accessible to Kyrgyzstani legal bodies, which may turn hostile in case of sudden adversity.

As was stated by Khan (1996): "In a situation of instability no group is likely to have a long term view and rights, which maximize long-run profits, are not likely to be created. Instead the rights, which are likely to be created and reallocated, are rights which generate rents over short time horizons."

Based on the earlier discussion of the political context of Kyrgyzstan, it becomes evident that patron-client networks belong to the clientelist type (Khan, 1996). Following Khan's (1996) logic, rent-seeking activities, leading to leakage of funds from the productive use into these networks, are harmful for growth due to the rent-seekers' unwillingness to put them back into productive use via commitment to long-term investments.

5.3.2 Rents for Households

When it comes to the redistributive rents provided to households in the form of low tariffs, there is also a set of problems, making it difficult to support a positive opinion on the effectiveness of these rents' in provision of allocative efficiency in the power sector. It was already pointed out that the tariffs policy is flawed, since it provides all households, including affluent ones, with low tariffs subsidized by the other categories of users, electric energy export revenues, etc. Ironically, it was demonstrated that the more affluent people are those, who gain from these cross-subsidies the most at the expense of other categories of users as well as power sector companies and the state budget. Thus, we can see that

objectives of allocative efficiency cannot be met under such policies. Another important aspect, hindering the efficiency of these transfer rents, is that low straight-line tariffs do not provide incentives for more efficient use of electricity. Frugal and efficient use of electricity can make substantial power resources available in much shorter time and will require much less spending as compared to investments needed for increasing the capacity of generation (Hasanov, et al., 2011). Taking this into account, such consumption-efficiency enhancing effect of introducing 'block' or 'lifeline' tariffs would be very welcome.

Based on the arguments above and following the logic of the analytical framework described in the Literature Review chapter, we can conclude that all major rents and rent-seeking activities in the power sector, illustrated on Figure 14, benefit almost exclusively the rent-seekers alone and result in the creation and maintenance of inefficient rents. These rents are created as a result of withdrawing resources from the productive use at expense of SOEs and public financial interests.

When it comes to analyzing rents, resulting from low tariffs for the poorest citizens, it is unlikely that these rents will have significant impact on their quality of life for several reasons. First, as was mentioned earlier, poor households consume less electric power than more affluent consumers, which decreases share of subsidies received by the poor. Second, since current spending on energy in Kyrgyzstan according to Slay (2011) is below the affordability level even for the poorest, higher tariffs would probably not cause significant worsening of their quality of life, not even mentioning more affluent people.

5.4 General Implications of the PDCs' Privatization

From review of the privatization literature we saw that SOEs' susceptibility to political influence was defined as one of the main factors causing inefficiency of the SOEs. The reason is that SOEs' are forced by politicians, who tend to prioritize own political interests and maximization of personal wealth more than increasing social welfare, to pursue strategies maximizing payoffs to politicians and not the best interests of these firms (Boycko, Shleifer, & Wishny, 1996).

Privatization in Kyrgyzstan is expected to contribute to the improvement of the power sector performance by significantly reducing politicians' ability to influence decision making and employment aspects of the PDCs' operations. Positive effect of privatization is achieved primarily through behavioral changes caused by shifts in incentives (Yarrow, 1986).

As was mentioned earlier, soft-budget constraints and lenient monitoring requirements lead to distortion of SOE managers' incentives. Therefore, hardening of budget constraints and replacing lenient formal monitoring requirements with effective performance monitoring system, following the privatization, are expected to allow new owners to effectively control managers, contribute to the development of effective corporate governance and rectify the distorted incentive problems. Introduction of more effective corporate governance practices and creation of incentives to improve cost-efficiency should result in improved performance of the PDCs.

Divestiture of PDCs to strategic foreign investors was found by researchers to be leading to much better post-privatization performance as

compared to domestic owners. Privatization to foreign investors with proven record of successfully running electric utility companies is expected to attract capital and know-how necessary for modernizing electricity infrastructure, reducing system losses, and finally resulting in higher efficiency and better financial performance.

Privatization of public utilities in most cases is accompanied by tariff raises, which, understandably, induce negative reaction by consumers, faced with the burden of increased costs. However, in Kyrgyzstan it would be erroneous to measure overall social welfare of electric utility services by the price aspect alone. Another factor worth consideration is the aspect of quality and reliability of electricity supply, which has been gradually deteriorating due to inadequate financing of maintenance and renewal of technical infrastructure. Poor technical condition of the electricity distribution networks is the reason of a large number of interruptions in services of electric power supply. Slay (2001) argues that the poorest people in Kyrgyzstan suffer from the interruptions of electricity supply the most. Also, taking into account that in Kyrgyzstan share of spending on energy in the overall spending is low by international standards even for the poor, it seems doubtful that moderate increase in the residential tariffs would result in the poor households facing significant loss of welfare.

Moreover, taking into account the flawed tariffs policy in force, which allocates proportionally more subsidies to more affluent and politically active households, to achieve higher allocative efficiency it is probably necessary to revise tariffs before privatization takes place. Such revision could possibly be done by adopting block" or "lifeline" electricity tariffs structure, which would

provide for cross-subsidization of tariffs for the poor, who are expected to consume less energy, by other consumers, who use more electricity. According to Tallapragada et al. (2009) such tariffs, steeply increasing with the amount of electricity consumed, are more effective from the affordability perspective than straight-line tariffs. Very important side-effect of introducing such "block" tariffs would be creation of incentives for consumers to use electric power more efficiently.

As was observed by various authors, privatizations of public utilities can have positive welfare effects and even make the lower income people the biggest beneficiaries of reforms (Wood, 2004; Guriev & Megginson, 2007).

According to the consultancy company Tetra Tech Es Inc. (2011) increasing revenues of the power sector is absolutely necessary for creating conditions conducive to rehabilitation and development of the sector's technical infrastructure, because continuation of current mode of operations will inevitably bring about gradual deterioration of the sector's technical condition. Technical degradation will increasingly result in a daily hardship and high costs imposed on population and business community and create tangible risk of a catastrophic breakdown (TetraTech Es, Inc., 2011).

5.5 Implications of Privatization for Rent-Seeking in the Power Sector

Analysis of implications that privatization of the PDCs might have on major groups of the power sector stakeholders and rent-seeking activities, defined and discussed above, will be provided in this section.

Politicians

Privatization of PDCs will be effective in reducing adverse effects that unproductive rent-seeking activities by politicians might have for efficiency of the power sector enterprises. This positive effect can be achieved mainly as a result of significant reduction of the politicians' capacity to control strategies, followed by the power sector enterprises, including strategies, defining the PDCs' human resource management policies.

Private ownership by foreign investors is expected to result in drastic changes in the way personnel is selected, managed and promoted on the basis of merit and talent. Using competitive selection procedures for hiring managers, who will be likely to have advanced management knowledge and skills, should bring about significant improvement in the PDCs efficiency.

Hardening of budget constraint and introduction of effective corporate governance mechanisms should help rectify incentives problems and orientate managers towards focusing on achieving higher cost-efficiency in the PDCs operations. Improved overall monitoring by foreign owners and introduction of effective internal audit function should greatly hinder managers' ability to engage in collusive procurement and tendering procedures.

Consumers

As was mentioned above, it is likely that tariff raises might be needed to make privatization attractive for investors. Despite a generally cautious attitude that people in developing countries have to privatization, it can be noted that many researchers of outcomes that privatization reforms had in many developing countries suggest that even the poorest enjoyed welfare increases following privatization of public utilities.

It is probably very straightforward to suggest that raising tariffs will contribute to financial performance of the PDCs. Off course, in case of the natural monopolies like public utilities, even after the privatization the government should reserve the right to regulate operations of PDCs. If the objective of privatization is to reach self-sustainability of power sector enterprises, as is stated in diverse strategic policy documents of the government of KR, the tariffs policy should be set so as to provide foreign investors with an opportunity to maintain certain level of profitability.

As was pointed out earlier, the PDCs' ability to use disconnections of non-paying customers as a disciplinary measure is seriously weakened by resistance to it by government entities, local municipalities, law enforcement agencies and other politically influential groups (TetraTech Es, Inc., 2011). Since privatization is expected to result in weakening control of PDCs by politicians, it should also decrease the influence by the abovementioned parties. Thus, privatization is expected to allow the PDCs to use disconnections more effectively as a disciplining tool, eventually leading to increased collection of payments and better financial performance.

Industry Professionals

As has already been mentioned above, the severe "agency" problem causing distortion of incentives can partially be resolved by withdrawal of soft budget constraint and introduction of effective corporate governance mechanisms. Exacting monitoring requirements imposed by foreign investors and duly conducted internal audit should prevent managers from getting involved in large-scale violations of the specified procurement rules.

Elimination of corruption on lower levels will probably require more time, taking into account the large number of subdivisions that each PDC has. However, it is likely that new management will make efforts to decrease opportunities for such illicit data manipulations and electricity pilfering, possibly by introducing advanced billing input systems, changing hardware, used for metering electricity consumption, or creating internal security division, etc.

Based on the projections above, we can conclude that divestiture of PDCs to large foreign investors is likely to bring about significant reduction in technical and commercial losses, increase collection of payments, which improve financial position of all power sector enterprises, including the upstream generation and transmission companies.

Suppliers of Fuel and Equipment

Privatization of PDCs[8] is expected to practically resolve the issue of collusion between corrupt power sector professionals and oligopolistic group of fuel and equipment suppliers. As has already been mentioned, private owners are expected to improve overall monitoring and introduce effective internal audit function, which should significantly weaken the opportunities for collusive procurement and tendering procedures. By doing so, privatization effectively puts an end to previously constrained competition in the tendering processes. Increased competition should eliminate allocation of rents to the suppliers in the form of excessively high prices, which previously could be maintained due to collusive agreement with the power sector professionals. Increased competition should

[8] In the last several attempts to privatize JSC "Severelectro", the biggest and best performing of all PDCs, it was bundled into privatization package together with Bishkek TPP, which is the main consumer of fuel oil, natural gas and coal.

restore incentives for providing high quality of fuel and equipment necessary to win tendering contests.

Thus, we can see that privatization is expected to resolve the issue of inflated capital costs and restore incentives for providing high quality of fuel and equipment. This will positively affect both financial and operational performance of PDCs.

Chapter 6: Conclusions

Power sector has always been a so-called "strategically" important sector of the Kyrgyz economy. However, for many years the necessity of financing the rehabilitation of the power sector's fixed assets was neglected, which led to gradual deterioration of technical infrastructure of the power sector. High level of technical wear and tear coupled with unsatisfactory financial performance is the reason, causing inability of the power sector companies to provide satisfactory level of quality and reliability of power supply.

This research was conducted in order to achieve deep understanding of main factors, causing the inefficiency of the power sector enterprises. In this thesis special focus was placed on defining the types of rent-seeking activities and rents, enjoyed by the main groups of the power sector stakeholders, and analyzing how these rent-seeking activities might influence performance of the power distribution companies.

Another question, this thesis sought to answer, was to define reasons why privatization of the power distribution companies, which for a long time was presented as a possible remedy for addressing the sector's efficiency problems, is likely to cause contraction of corruption and other inefficient rent-seeking activities in the power sector, leading to improvement in efficiency.

The inefficiency in the distribution of electric energy is, in the first place, reflected in high technical and commercial losses of electric energy, as well as in poor collection of tariff payments, leading to accumulation of huge accounts

receivable and accounts payable that the power distribution companies have to reimburse to the generation and transmission companies. These are the indications of the importance that efficiency of the PDCs in decreasing system losses and collecting payments for supplied electricity has for sustaining stable financial condition of the sector's SOEs. At the same time, it was suggested by many experts that corruption and other deeply embedded rent-seeking activities in the sector lead to aggravation of the inefficiency problem.

Privatization of power sector enterprises in Kyrgyzstan has controversial history, to say the least. As was mentioned earlier, privatization of two power distribution companies was conducted in a dubious manner resulting in transferring control over these PDCs to a company, which was allegedly affiliated with the family of the former President Bakiev. Soon after the revolution of April 2010 the interim Government nationalized these companies back. Taking into account this controversial privatization experience in, it certainly will be difficult for the Government to go for privatization of the PDCs in the short term. Yet privatization of the power distribution companies is possible in principle, and can still be considered as a possibly effective means of improving efficiency of power sector companies.

Market for political power in Kyrgyzstan is fragmented and many clan-based patron-client networks compete for gaining dominant position. Business and politics are closely interconnected in Kyrgyzstan. Substantial financial resources, held by businesspeople, can be used for purchasing political power, which in turn can be used as a means of securing protection for property rights and creating opportunities for the business to grow. In this system political and

business players view the state as a vehicle for self-enrichment and source of rents for themselves and their supporters. Due to salability of many posts in the government, civil service, municipal bodies, lucrative SOEs people consider those positions as risky assets, which they invested into with the goal of maximizing return on investments in the shortest time possible.

Research Question 1: How do corruption and other rent-seeking activities in the power sector affect efficiency and profitability of power sector enterprises?

This research question was tackled by applying the rent-seeking theory based analytical framework, discussed earlier in the text to the assessment of implications that rent-seeking activities, described above, might have for efficiency of the power distribution companies. This analysis required deep understanding of complex political context of Kyrgyzstan, including aspects, affecting the distribution of political power, such as informal competition between many fragmented informal patron-client networks.

Analysis of rent-seeking activities and corruption in the power sector helped define four major groups of the power sector stakeholders, who enjoy rents from the power sector. These are politicians, consumers, power sector professionals and suppliers of fuel and equipment. All of these actors enjoy certain types of rents at the expense of the power sector SOEs and the state budget. Politicians enjoy patronage payments and acquire ability to force SOEs to follow strategies, maximizing paybacks for the politicians. Power sector professionals extract rents through bribes from consumers for making illegal manipulations to billing records in order to decrease the amounts to be paid, engage in collusive

transactions with suppliers of fuel and equipment, etc. Residential consumers receive rents in the form of low tariffs, which are set far below marginal cost level and therefore have to be subsidized by other categories of users. The problem related to the residential tariffs is that the effective tariff structure allocates large share of subsidies to more affluent households, who do not need support by the state. Also low straight-line tariffs fail to create incentives for more efficient use of electricity by households. Suppliers of fuel and equipment enjoy rents in the form of excessively high profit margins and functioning in the environment with constrained competition.

Analysis of rent-seeking activities of all four groups of stakeholders reveal that all four have negative implications for operational and financial efficiency of PDCs, as illustrated on Figure 14.

Analysis of rents suggests that significant share of rents, created and maintained by the power sector stakeholders are "inefficient" rents, representing resources withdrawn from production function altogether, thus possibly causing damage to overall social welfare.

Research Question 2: Why privatization of power distribution companies is likely to bring about improvement in efficiency and growth?

Second research question was tackled by applying conclusions, drawn from the theoretical and empirical literature on privatization; to the analysis of the effect that privatization might have on rent-seeking activities in the power sector.

Privatization of PDCs is likely to have positive effect leading to reduction of adverse effects that politicians' rent-seeking activities might have for efficiency

of the power sector enterprises. This is achieved mostly due to improvement in corporate management practices, and rectifying the managerial incentives problem. Privatization is also expected to result in hardening of budget constraint and introduction of effective corporate governance and exacting monitoring mechanisms, which are expected to create efficiency-enhancing incentives and lead to serious contraction of corrupt activities by the power sector employees. Revision of tariffs, which usually precedes or accompanies privatization, also should contribute to improving financial performance of the PDCs.

Based on the projections above, we can conclude that divestiture of PDCs to foreign investors is likely to bring about significant reduction in technical and commercial losses, increase collection of payments and decrease capital costs. All these changes are expected to have positive effect on operational and financial efficiency of the power distribution companies.

What is needed for successful privatization?

As was indicated by many researchers ((Estrin, Hanousek, Kocenda, & Svejnar, 2009; Cook & Kirkpatrick, 1997; Yarrow, A Theory of Privatization, or Why Bureaucrats are Still in Business, 1999) it is very important to recognize that privatization alone cannot guarantee improvement in the efficiency. To reach its efficiency enhancement objectives it needs to be accompanied by an array of systemic changes and complementary reforms. As can be seen from many real life examples, in many cases SOEs' inefficiency problems and possible solutions were revealed long ago, but decisive action can be halted for long due to priority

objectives that had to be tackled by the incumbent governments at that time (Bacon & Besant-Jones, 2001).

It needs to be noted that consumers in many developing countries tend to view privatization as detrimental to the welfare of the poor and benefitting only the powerful and wealthy (Auriol & Blanc, 2009). Because there are always people, who will suffer from reforms, success of privatization requires provision of sufficient benefits to these people in order to persuade them to accept privatization (Bacon & Besant-Jones, 2001).

In Kyrgyzstan, which like many other developing countries, is faced with problems of dismal inefficiency in the public sector, privatization seems to offer very promising outlooks. However, when planning for implementation of privatization reforms following the guidelines provided above can prove crucial for avoiding pitfalls and ensuring overall success of reforms.

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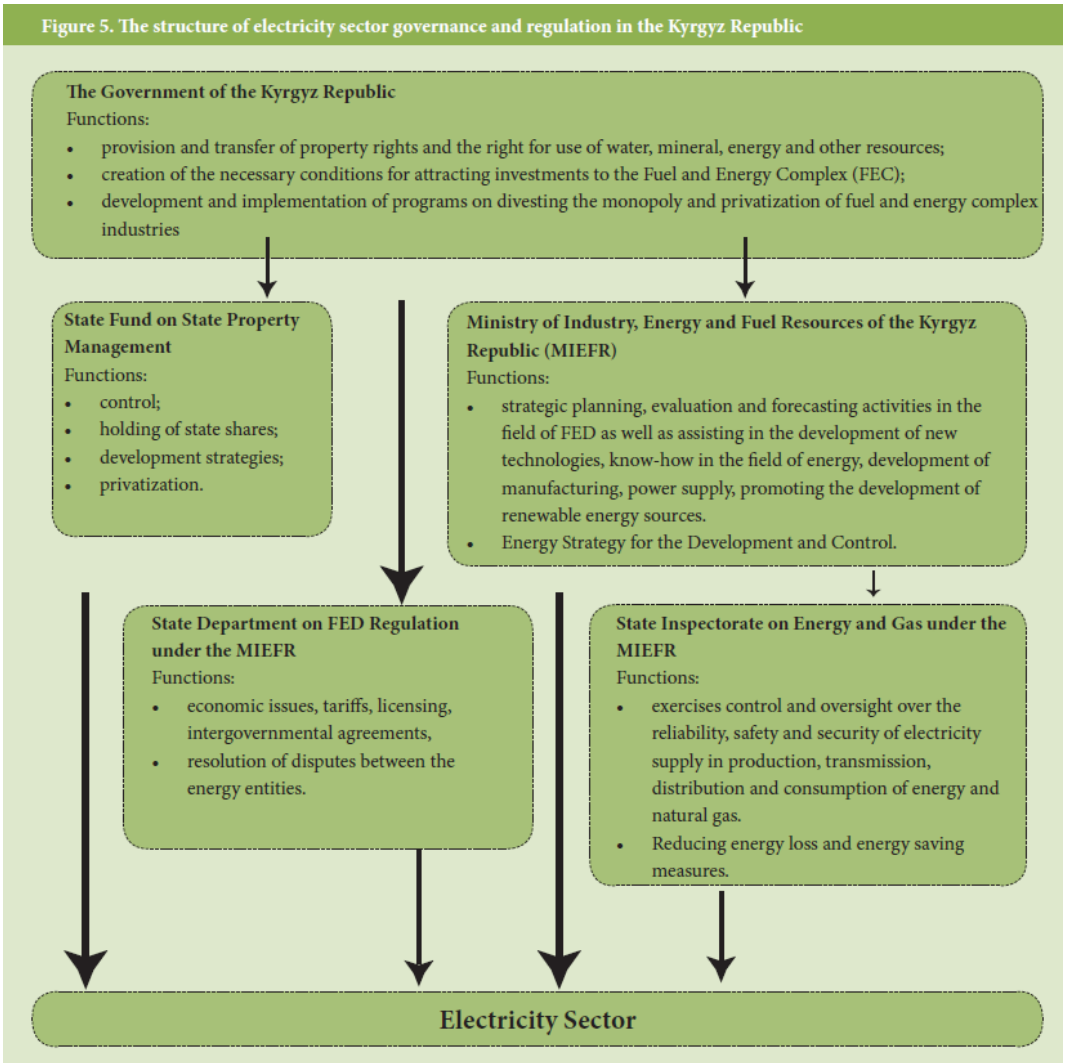
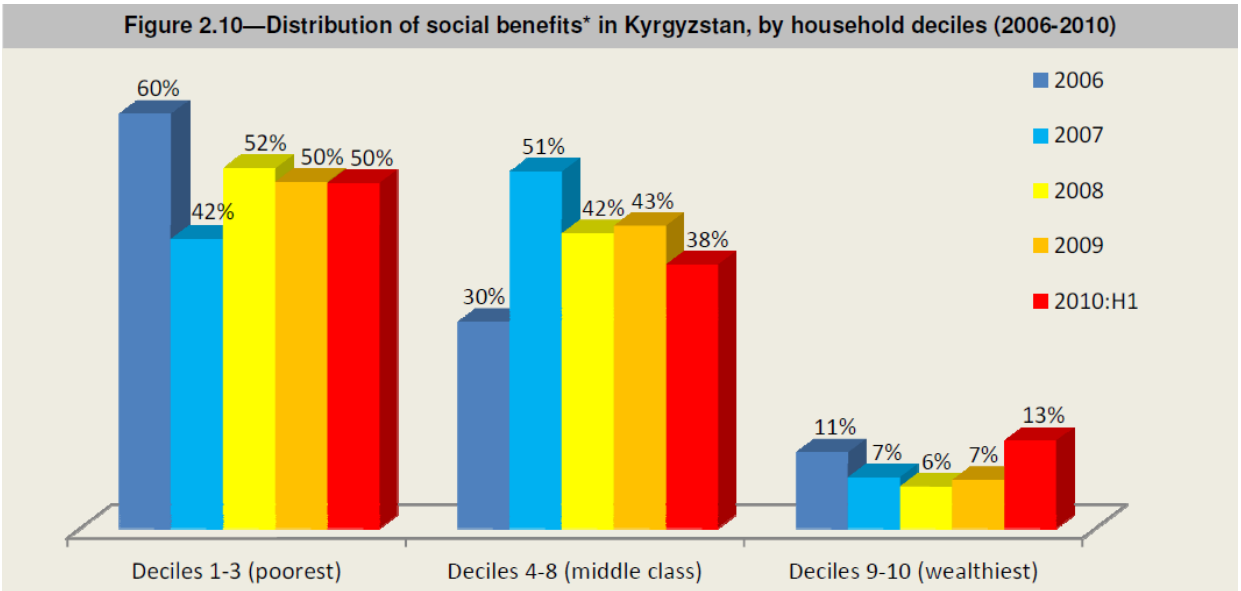
Appendices

Appendix 1: The Structure of Power Sector Governance in the Kyrgyz Republic



Source: Abdyrasulova, N., & Kravsov, N. (2009, October). Electricity Governance in Kyrgyzstan: An Institutional Assessment

Appendix 2: Distribution of Social Benefits in Kyrgyzstan, by Household Deciles (2006-2010)



Source: Energy and Communal Services in Kyrgyzstan and Tajikistan: A Poverty and Social Impact Assessment, Slay B. 2011

Appendix 3

POWER DISTRIBUTION COMPANIES - SIMPLIFIED INCOME STATEMENT FIGURES

		Severelectro		Vostokelectro		Oshelectro		Djalalabatelectro		PDCs Total	
		2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Sales (bills issued)	thous. som	3,509,557	3,754,155	899,793	1,032,154	1,215,096	1,376,193	848,147	954,321	6,472,593	7,116,823
Industrial	thous. som	503,921	650,486	161,486	169,360	175,598	207,065	249,567	274,390	1,090,572	1,301,299
Households	thous. som	1,708,586	1,774,879	428,250	447,723	682,671	758,771	399,170	416,376	3,218,677	3,397,749
Expenses											
Material costs	thous.som	280,575	382,207	71,394	93,788	134,580	166,451	98,052	115,704	584,601	758,149
Payroll	thous.som	474,004	560,422	165,534	203,867	240,614	264,079	181,714	198,535	1,061,865	1,226,903
Social fund deductions (pension)	thous.som	80,906	95,598	26,778	34,412	45,217	45,554	34,601	34,636	187,502	210,199
Depreciation of main assets	thous.som	169,805	182,508	21,550	21,647	29,678	32,539	21,062	20,833	242,094	257,526
Other expenses	thous.som	107,824	158,008	38,929	63,684	104,019	50,305	17,886	19,489	268,658	291,485
Taxes (excluding income tax)	thous.som	25,680	15,810	386	4,769	977	4,312	210	2,999	27,252	27,890
Costs of distribution	thous.som	1,138,794	1,394,553	324,569	422,166	555,084	563,239	353,524	392,196	2,371,972	2,772,153
TOTAL COSTS of distribution (includes debt servicing and capital expenditures)	thous.som	1,490,268	1,774,046	359,068	469,642	578,944	606,986	369,369	408,661	2,797,649	3,259,335
Costs of power generation	thous.som	1,501,914	1,502,195	417,417	349,902	489,028	474,033	320,207	312,715	2,728,567	2,638,846
Costs of power transmission	thous.som	560,588	651,745	180,597	189,039	230,868	257,248	177,367	183,422	1,149,420	1,281,454
TOTAL COSTS	thous.som	3,554,693	3,927,985	957,083	1,008,584	1,298,840	1,338,267	866,943	904,799	6,677,558	7,179,635
PROFIT/LOSS	**thous.som**	**-45,136**	**-173,831**	**-57,290**	**23,571**	**-83,744**	**37,926**	**-18,796**	**49,522**	**-204,965**	**-62,812**

Source: the MEIKR data, provided in the electronic spreadsheet format

Appendix 4

POWER DISTRIBUTION COMPANIES' ACCOUNTS RECEIVABLE AND ACCOUNTS PAYABLE (2009-2011)

		Severelectro			Vostokelectro			Oshelectro			Djalalabatelectro			PDCs total		
		2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011
Accounts Receivable	**thous.som**	**1,060,504**	**220,576**	**288,270**	**414,508**	**278,023**	**291,510**	**766,349**	**490,343**	**625,227**	**137,614**	**190,590**	**289,992**	**2,378,975**	**1,179,532**	**1,494,999**
Industrial	thous.som	36,685	22,401	290,659	80,268	98,498	119,623	67,136	78,954	75,186	20,666	11,626	14,788	204,755	211,479	500,256
as % of total		3.5%	10.2%	100.8%	19.4%	35.4%	41.0%	8.8%	16.1%	12.0%	15.0%	6.1%	5.1%	8.6%	17.9%	33.5%
Government Institutions	thous.som	32,011	30,935	31,559	21,137	21,451	26,240	19,335	33,780	13,526	11,191	13,627	35,539	83,675	99,793	106,863
as % of total		3.0%	14.0%	10.9%	5.1%	7.7%	9.0%	2.5%	6.9%	2.2%	8.1%	7.1%	12.3%	3.5%	8.5%	7.1%
Agricultural	thous.som	77,150	6,032	-4,307	2,724	1,479	2,912	17,057	7,374	12,100	937	2,790	-293	97,868	17,675	10,411
as % of total		7.3%	2.7%	-1.5%	0.7%	0.5%	1.0%	2.2%	1.5%	1.9%	0.7%	1.5%	-0.1%	4.1%	1.5%	0.7%
Households	thous.som	757,644	108,917	197,281	288,238	128,453	86,898	543,251	306,360	416,064	94,568	145,888	214,027	1,683,701	689,618	914,271
as % of total		**71.4%**	**49.4%**	**68.4%**	**69.5%**	**46.2%**	**29.8%**	**70.9%**	**62.5%**	**66.5%**	**68.7%**	**76.5%**	**73.8%**	**70.8%**	**58.5%**	**61.2%**
Other consumers	thous.som	157,013	52,291	-226,923	22,140	28,143	55,837	119,570	63,875	108,352	10,252	16,660	25,931	308,976	160,967	-36,802
as % of total		14.8%	23.7%	-78.7%	5.3%	10.1%	19.2%	15.6%	13.0%	17.3%	7.4%	8.7%	8.9%	13.0%	13.6%	-2.5%
Writing off approved by the law 16 of 01.28.2010	thous.som		**930,415**			**254,346**			**484,325**			**90,779**			**1,759,865**	
Accounts Payable																
To generation company	**thous.som**	**2,120,671**	**1,041,709**	**1,057,992**	**421,514**	**306,279**	**328,232**	**1,148,406**	**165,354**	**167,723**	**9,182**	**20,418**	**25,709**	**3,699,773**	**1,533,760**	**1,579,656**
Writing off approved by the law 16 of 01.28.2010			**1,171,474**			**218,709**			**660,269**			**3,104**			**2,053,558**	
To transmission company	**thous.som**	**561,223**	**436,798**	**445,341**	**120,846**	**124,979**	**147,278**	**717,675**	**374,553**	**385,306**	**233,995**	**256,491**	**299,283**	**1,633,738**	**1,192,822**	**1,277,207**
Writing off approved by the law 16 of 01.28.2010	thous.som		**153,228**			**33,688**			**199,810**			**64,574**			**451,300**	

Source: the MEIKR data, provided in the electronic spreadsheet format

Appendix 5

POWER DISTRIBUTION COMPANIES - COLLECTION OF PAYMENTS (2010 - 2011)

		Severelectro		Vostokelectro		Oshelectro		Djalalabatelectro		PDCs Total	
		2010	**2011**	**2010**	**2011**	**2010**	**2011**	**2010**	**2011**	**2010**	**2011**
TOTAL PAYMENTS COLLECTED	thous.som	3,316,847	3,660,853	798,915	893,168	1,048,866	1,250,095	708,229	860,096	5,872,857	6,664,212
From Households	thous.som	1,526,678	1,683,258	354,099	411,310	553,579	649,973	270,239	358,450	2,704,595	3,102,991
	% of total	46.0%	46.0%	44.3%	46.1%	52.8%	52.0%	38.2%	41.7%	46.1%	46.6%
OVERALL COLLECTION, as % of sales	%	**94.5%**	**98.0%**	**88.8%**	**86.5%**	**86.3%**	**90.8%**	**83.5%**	**90.1%**	**90.7%**	**93.6%**
Industrial	%	58.8%	58.0%	98.7%	92.0%	105.3%	100.3%	100.9%	97.4%		
Government Institutions	%	105.1%	97.0%	98.1%	102.3%	112.1%	112.9%	95.7%	85.7%		
Agricultural	%	106.4%	114.0%	46.2%	16.6%	57.8%	70.5%	218.6%	159.3%		
Households	%	**89.4%**	**95.0%**	**82.7%**	**91.9%**	**81.1%**	**85.7%**	**67.7%**	**86.1%**	**84.0%**	**91.3%**
Other consumers	%	129.8%	136.0%	85.1%	83.4%	65.3%	80.0%	84.6%	90.9%		
Expected Increase in in Accounts Receivable (Sales less Collection)	thous.som	192,710	93,302	100,878	138,987	166,230	126,098	139,918	94,224	599,736	452,611

Source: the MEIKR data, provided in the electronic spreadsheet format