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Article

Directions for Ensuring The Financial Stability of Electricity Enterprises with State Participation

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Abstract: This article is the result of research on the directions for ensuring the financial stability of state-owned electric grid enterprises. The main analysis presents scientific proposals and conclusions regarding state-owned enterprises, the concept of their financial stability, and the directions for ensuring it.

Keywords: State-owned Enterprises, Financial Stability, Subsidy, Leverage, Enterprise Profitability

1. Introduction

In his speeches, the President of the Republic of Uzbekistan emphasized the need to reduce costs and improve efficiency for state-owned enterprises, stating that production costs in major industries should be reduced by 20 trillion UZS and accounts receivable by 8 trillion UZS[1].

State-owned enterprises, which held a significant share in the second half of the 20th century, have been of great importance. The government has financially supported state-owned enterprises, which has led to substantial expenditures from the budget. Correspondingly, these enterprises have been subject to significant tax collection. High tax rates restrict investment activity in many sectors. Furthermore, high levels of subsidies in the operations of state-owned enterprises are often associated with bureaucracy, inefficiency, low quality, and a lack of accountability (Papenfuß, 2014).

One proposed solution for ensuring the financial and economic stability of these enterprises is privatization. However, it can be observed that the privatization of certain sectors and industries has proven to be ineffective (Whitfield, 2014).

State-owned enterprises, like private enterprises, are established for commercial purposes. However, the government may participate in the activities of these enterprises through specific mechanisms, such as retaining control over decisions like appointing board directors and the chairman of the board. The goal here is to define commercial objectives aimed at improving the efficiency, quality, and profitability of these enterprises. However, these commercial objectives may conflict with government objectives. For instance, there may be cases where government social and economic goals take precedence over commercial objectives (Chen, 2005; Mbo and Adjasi, 2017).

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[1] https://president.uz/uz/lists/view/6971

Government intervention in the activities of state-owned enterprises can lead to confusion between commercial and social objectives, the formation of incompetent management teams, and inefficient and weak governance (Wisuttisak and Rahman, 2021).

Scholars have defined financial stability as the ability of state-owned enterprises to operate without relying on subsidies (Putra et al., 2021).

Literature Review

Ensuring the financial stability of state-owned enterprises is of critical importance. Considering that state-owned enterprises primarily encompass sectors such as oil, gas, electricity, and other key industries, the government supports these enterprises to achieve economic and political strategic goals, mitigate the risks of external threats and dependency, provide public goods and services at affordable prices, and enhance banking capabilities (Abdullah et al., 2019).

Scholars have observed that there are no significant differences between the economic and financial performance indicators of state-owned enterprises and private enterprises (Omran, 2004; Goldeng et al., 2008). However, it has also been found that the sharp openness of the competitive environment for private enterprises significantly increases their efficiency compared to state-owned enterprises (Deventer and Malatesta, 2001; Phi et al., 2001).

Other researchers have linked the financial performance of state-owned enterprises to agency theory in their studies. In this context, the enterprise's operations are viewed in terms of the principal-agent relationship, where the principal includes the government, relevant ministries, political parties, and the public (Mbo and Adjasi, 2017).

Financial stability is defined as the ability of an organization to continue its operations in an unstable economic environment (Putra et al., 2021). Another scholar describes it as the enterprise's ability to perpetuate its business activities indefinitely (Filene, 2011). According to Ayayi and Sene (2010), financial stability should not be studied solely as the ability to cover expenses with revenue. The Australian Local Government Association (2006) suggested that measures of financial stability should account for the enterprise's ability to meet its current and future obligations. Financial stability refers to an enterprise's ability to generate profits, sustain growth, maintain healthy cash flow, preserve strong liquidity, and fulfill its current and future liabilities (Kakati and Roy, 2021).

Said et al. (2019) argue that enterprises can achieve financial stability by effectively managing three segments: cash flow, capital, and continuous production. Therefore, the primary requirement for achieving stability is ensuring that the enterprise's revenue is sufficient to cover expenses such as capital expenditures, operational costs, and inflation (Mia et al., 2016).

Directly, governments may sometimes compel state enterprises to provide goods or services at prices below cost (Boko and Qin, 2011) or to retain surplus staff to address unemployment issues. Indirectly, governments may appoint top managers—such as retired officers—who lack experience in the industry where the enterprise operates but maintain close connections with the government. All these actions can harm profitability in the short term and financial stability in the long term.

Electric power grid enterprises are also classified as state-owned enterprises. Furthermore, the demand for electricity continues to rise. Global electricity demand is expected to increase further over the next three years, with an average annual growth rate of 3.4% projected until 2026[2]. In 2021, the world's 220 largest electric power companies accounted for approximately 3% of the total market capitalization of $96 trillion of all publicly traded companies globally.

[2] https://www.iea.org/reports/electricity-2024/executive-summary

This includes companies whose primary business is battery production, as demand for batteries has surged due to the growing adoption of electric vehicles and the need for utility-scale energy storage services. Notable examples include CATL (China) and LG Energy Solution (South Korea), which are battery manufacturers with a combined valuation of approximately $173 billion. The largest company in this sector is NextEra Energy, an American energy company that produces and sells electricity across 49 U.S. states and Canada. Similar to the oil and gas industry, the most valuable electric power companies are predominantly state-owned enterprises (SOEs), where the government or state-run business entities maintain significant control.

Some state-owned enterprises have public components, allowing their market value to be assessed. For example, TAQA, an energy holding company controlled by the government of Abu Dhabi in the United Arab Emirates, is valued at $96 billion. Other SOEs lack public components, such as The State Grid Corporation of China, which is the largest electric utility company in the world, serving over one billion customers. In 2023, it ranked third on the Fortune Global 500 list, trailing only Walmart and Saudi Aramco in total revenue.

2. Materials and Methods

This article analyzes the financial and economic performance results of power grid enterprises with state ownership. The analysis compares the results of econometric models developed by scholars with our findings, allowing us to draw relevant conclusions. Multiple methods are utilized to conduct econometric analyses and verify their results. For the analysis, data from the financial and economic performance of the Regional Electric Networks Joint Stock Company (REN JSC) was utilized. Based on the findings, the analysis is conducted following the proposed functional model.

$$ROE_{it} = \alpha_0 + \alpha_1 \text{Lev2}it_{-1} + \alpha_2 \text{ Liq}(AGE_{it}) + \alpha_3 \ln(TA_{it}) + \alpha_4 D_{it} + \varepsilon_{it}$$

The data consists of quarterly results. The key dependent variables include ROE (Return on Equity), ROA (Return on Assets), and other relative variables. Definitions of these variables are as follows:

a. ROE: Measures the profitability of equity.
b. ROA: Measures the profitability of assets.
c. Income: The revenue of the enterprise.
d. lev1: The ratio of borrowed funds to equity.
e. lev2: The ratio of borrowed funds to the total balance sheet value.
f. liq: The ratio of total current assets to total liabilities.

The leverage indicator is evaluated as follows:

a. leverage ≤ 1: Indicates that borrowed funds are equal to equity.
b. leverage = 0.5: Indicates that equity is twice as much as borrowed funds.
c. leverage < 0.1: Indicates the absence of any debt.

This analysis provides a structured assessment of financial sustainability and capital structure, with insights into how the financial performance of these enterprises aligns with theoretical models and practical benchmarks.

3. Results

Regarding the valuation results of electric energy companies in 2023, it is worth noting the data published by Boston University. According to the report, Nextera Energy in South America achieved outstanding results, with a market capitalization of $117.70 billion, in East Asia and the Pacific region, China's CATL had a market capitalization of $110.5 billion, in the Middle East and North Africa, Saudi Arabia's TAQA reached a market capitalization of $99.2 billion, Norway's Equinor recorded a market capitalization of $95.8 billion, South Korea's LG Energy Solution had a market capitalization of $80.5 billion.

These figures highlight the significant global market value of leading energy companies in different regions.[3]

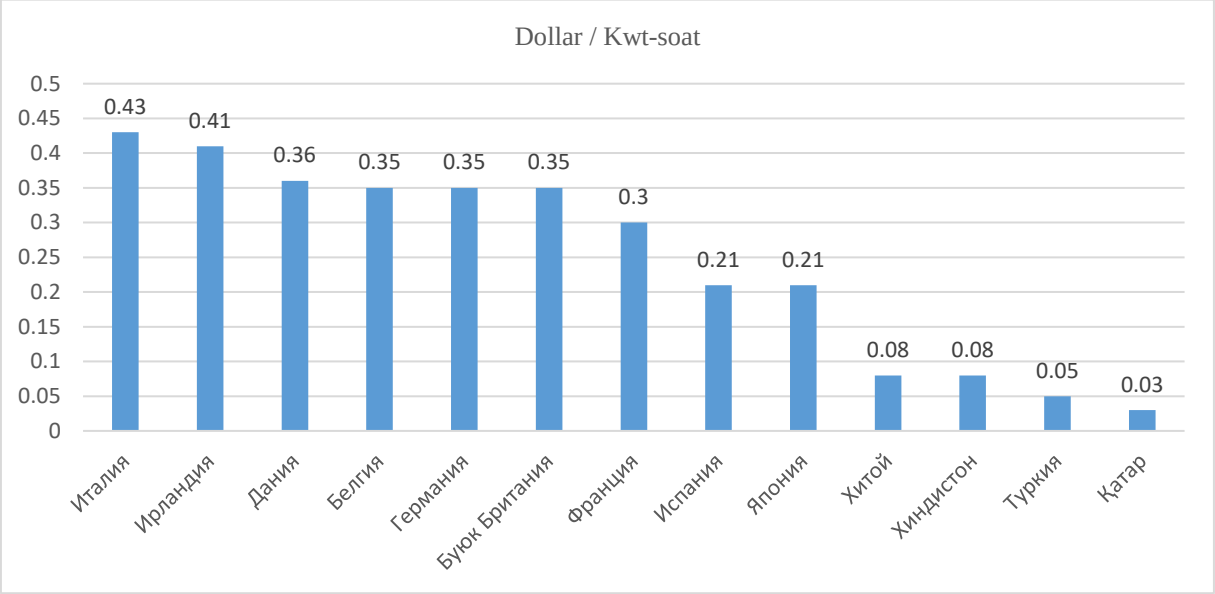


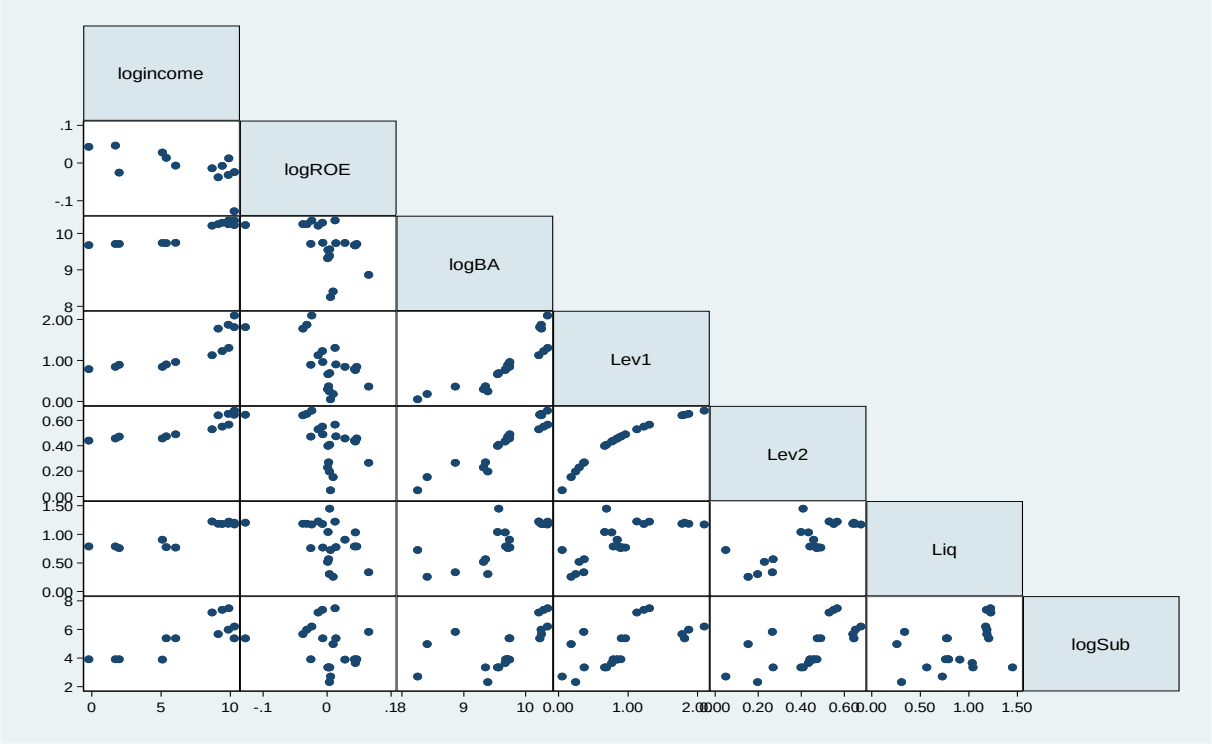
Figure 1. Comparative Information on Electricity Prices Across Countries.

As the demand for electricity continues to rise, electricity prices have also been observed. As of 2024, Italy, Ireland, and Denmark had the highest household electricity prices globally. During this period, Italian households paid $0.43 per kilowatt-hour, while the price in Ireland was $0.41 per kilowatt-hour. In contrast, residents of the United States paid nearly three times less.

Electricity prices vary widely across the world and even within a single country, influenced by factors such as infrastructure, geography, and taxes or fees determined by political decisions. In countries like Denmark, Belgium, and Sweden, taxes account for a significant portion of the final electricity price for end users. Meanwhile, nations such as Iran, Qatar, and Russia enjoy the world's cheapest electricity prices due to their high production of crude oil and natural gas.

Electricity prices are determined by the financial and economic condition of power grid companies, as well as other factors mentioned above. The level of government subsidies drawn from the state budget is analyzed depending on the presence of government intervention in price policies. Additionally, the results of econometric analyses conducted on the financial condition of the companies under review assess their profitability and the relationships between various financial ratios.

[3] https://visualizingenergy.org/where-are-the-worlds-most-valuable-electricity-companies/



	loginc~e	logROE	logBA	Lev1	Lev2	Liq	logSub
logincome	1.0000						
logROE	-0.6092	1.0000					
	0.0271						
logBA	0.9109	-0.4250	1.0000				
	0.0000	0.0487					
Lev1	0.7977	-0.5856	0.8661	1.0000			
	0.0011	0.0042	0.0000				
Lev2	0.8529	-0.4547	0.9391	0.9497	1.0000		
	0.0002	0.0335	0.0000	0.0000			
Liq	0.8910	-0.4106	0.7395	0.7267	0.7625	1.0000	
	0.0000	0.0577	0.0001	0.0001	0.0000		
logSub	0.8163	-0.2360	0.5778	0.6286	0.6225	0.4023	1.0000
	0.0007	0.3030	0.0061	0.0023	0.0026	0.0706	

Figure 2. Results and Graph of Correlation Analysis.

The general analysis of the variables in the correlation analysis indicates that there is a significant positive correlation between the company's income level and its leverage and liquidity ratios. Moreover, the significance of the correlations between these variables is also positive, with a p-value of 0.01, indicating a statistically significant result. Regarding the profitability indicator of the shareholder company, there is a weak negative correlation between the company's leverage values. The significance levels at both 5% and 10% error rates are considered significant.

Through analyzing the relationship between capital profitability and the company's leverage value in the regression model, conclusions on ensuring financial stability are drawn.

Variable	Model1	Model2	Model3	Model4
Lev2	-.09974797**			.35646408**
lag1g		-.10778819**		
lag2g			-.1204833**	
c.Lev2#				
c.Lev2				-.59102867***
_cons	1.0438771***	1.0458544***	1.0493198***	.9737299***
r2_a	.16565656	.17406781	.20004531	.39387026
r2	.2053872	.21536442	.24214819	.4515969
aic	-83.628974	-78.948613	-74.770506	-89.78755
bic	-81.446889	-76.859568	-72.779042	-86.514423

legend: * p<.1; ** p<.05; *** p<.01

Figure 3. Results of Regression Analysis Models.

4. Discussion

In the regression analysis, 4 models were analyzed, and based on the analysis, the model with the highest coefficient of determination and the greatest difference between them was selected. The highest value is observed in model 4. Furthermore, the model with the smallest values of the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) is considered the best model.

According to the analysis, the result of the first model indicates that the regression model found by the least squares method for model 4 is as follows:

$ROE=a + b_1 Lev2+b_2Lev2^2+e$ namely

$ROE=0.97 + 0.35 Lev2-0.59_2Lev2^2+e$

Based on these 4 models, we can determine the maximum leverage value for the Regional Electricity Network Company JSC. In this case, the maximum leverage ratio for ensuring the financial stability of the joint-stock company is considered, with this coefficient being Lev2 = 0.3. This means the total amount of debt should not exceed 30% of the total balance value.

Additionally, the Ramsey RESET test was conducted to check the hypothesis, and we accepted the null hypothesis. The results of the Ramsey RESET test are as follows: F(3, 16) = 0.92; Prob > F = 0.4512. Also, the Shapiro-Wilk W test was carried out to check the normal distribution of the model's residuals, and the result showed that p = 0.18, indicating a normal distribution.

5. Conclusion

The financial stability of state-owned electricity network companies is of significant importance, as ensuring stability serves to guarantee the sustainable operations of all stakeholders. To ensure the financial stability of these companies in line with established objectives, the following key measures need to be implemented:

a. Gradually shaping electricity prices based on market demand;
b. Increasing electricity supply by attracting both foreign and local investments in renewable green energy, thereby expanding solar and wind power stations;
c. Reducing taxes for electricity network companies and directing centralized investments from the budget to further enhance their financial and economic activities;

d. Effectively managing capital and debt resources in the financial operations of companies, and implementing measures to minimize risk levels.

Based on the research findings, the conclusion is that the leverage ratio of the "Regional Electricity Network Company" JSC should not exceed 30% of its total assets, which serves to ensure its stable profitability indicator.

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