

Monitoring Financial Indicators of Energy Utilities: An Example of Central European Energy Distribution Companies

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Introduction

This paper deals with a financial analysis of Central European energy distribution companies, especially electricity transmission and distribution and natural gas transportation and distribution companies. We focus on Czech Republic, Slovakia, Hungary, Poland, Austria, Germany and Switzerland. In this paper, we refer to the distribution system operators as DSOs and to the transmission system operators as TSOs.

Firms operating in energy distribution industries are often classified as natural monopolies and referred to as public utilities, since they provide a service that is affected with public interest. Since these companies have substantial monopoly powers and provide an essential service, they are regulated by independent regulatory bodies. Regulatory legislation and methods vary across the region. Central Europe is characterized by huge economic and social disparities and differences in regulatory experience.

Financial analysis of industry sectors forms a gap between macroeconomic analysis and financial analysis of particular companies. In this paper, we determine common performance indicators (financial ratios of profitability, asset management, liquidity, solvency) of energy distribution sector in the Central European region and we analyse the development of return on equity (ROE) and its components in individual countries between 2005-2009.

Source data

Data was collected for Czech Republic, Slovakia, Hungary, Poland, Austria, Germany and Switzerland. In the countries of the former Eastern Bloc, energy markets are still very concentrated and only a very limited number of firms are operating on the market. In Austria and Germany, the market is much less concentrated and therefore more competitive – for instance, multiple operators participate on electricity transmission, whereas in post-communist countries, only one monopoly company operates the transmission grid. The

situation is similar in the field of electricity and natural gas regional distribution and gas transportation. We based our analysis on 64 Central European major energy distribution companies, of which 12 Czech, 6 Slovak, 8 Hungarian, 10 Polish, 8 Austrian, 12 German and 8 Swiss companies. Data was collected from annual reports of the companies for the period 2005-2009.

Methodology

Financial ratios are measures of a firm's performance that examine a firm from different point of views. Traditionally, financial ratios are grouped into five major areas:

- Profitability ratios,
- Asset management ratios,
- Liquidity ratios,
- Financial leverage ratios,
- Capital market analysis ratios.

In this paper, we do not deal with capital market ratios and focus on the first four areas since the analysed firms are often not quoted on stock exchanges.

Amongst the major **profitability ratios**, we focused on the return on equity (ROE), the return on assets (ROA), the return on capital employed (ROCE) and the return on sales, also called profit margin (ROS). **Asset management ratios** indicate how efficiently a company utilizes its assets. We focused on the asset turnover ratio and the fixed asset turnover ratio. **Liquidity ratios** measure a firm's ability to meet its short-term obligations. Common liquidity measures are the current ratio and the quick ratio. **Financial leverage ratios** measure a firm's debt and its long-term solvency. We determined the debt ratio, the D/E ratio and the leverage ratio.

The ratios used in the analysis are summarized in Tab. 1.

Tab. 1: Selected performance indicators

Indicator	Abbreviation	Formula
Return on equity (ROE)	ROE	EAT/Equity
Return on assets (ROA)	ROA	EBIT/Total assets
Return on capital employed (ROCE)	ROCE	EBIT/Capital employed
Return on sales (ROS)	ROS	EBIT/Sales
Asset turnover	AT	Sales/Total assets
Fixed asset turnover	FAT	Sales/Fixed assets
Current ratio	CR	Current assets/Short-term liabilities
Quick ratio	QR	(Current assets – inventory)/Short-term liabilities
Debt ratio	DR	Total debt/Total assets
D/E ratio	DER	Total debt/Equity
Leverage ratio	LR	Total assets/Equity

Since ROE is the most important ratio, it is often decomposed using Du Pont identity. ROE can be broken into five individual indicators as follows:

$$ROE = \frac{EAT}{E} = \frac{EAT}{EBT} \times \frac{EBT}{EBIT} \times \frac{EBIT}{S} \times \frac{S}{A} \times \frac{A}{E}, \quad \text{Eq. 1}$$

where EAT denotes after-tax profit, EBT is profit before taxes, $EBIT$ denotes earnings before interest and taxes (operating profit), S denotes sales, A denotes total assets and E denotes equity. The five indicators are defined in Tab. 2.

Tab. 2: Selected ROE components

Indicator	Formula
Tax effect ratio	EAT/EBT
Financial cost ratio	EBT/EBIT
Return on sales	EBIT/Sales
Asset turnover	Sales/Total assets
Leverage ratio	Total assets/Equity

The impact of year-to-year change of these five individual indicators upon the total year-to-year change of ROE can be determined using the so-called logarithmic method as follows.

We divide the return on equity in period two ROE_2 by the return on equity in the preceding period ROE_1 and obtain

$$\frac{ROE_2}{ROE_1} = \frac{\frac{EAT_2}{EBT_2} \times \frac{EBT_2}{EBIT_2} \times \frac{EBIT_2}{S_2} \times \frac{S_2}{A_2} \times \frac{A_2}{E_2}}{\frac{EAT_1}{EBT_1} \times \frac{EBT_1}{EBIT_1} \times \frac{EBIT_1}{S_1} \times \frac{S_1}{A_1} \times \frac{A_1}{E_1}}, \quad \text{Eq. 2}$$

Let $I_{X/Y}$ denote the relative change of the factor X/Y , ie the fraction

$$I_{X/Y} = \frac{\frac{X_2}{Y_2}}{\frac{X_1}{Y_1}}, \quad \text{Eq. 3}$$

and let I_{ROE} denote the relative change of ROE . The multiplicative relationship described by Eq. 2 can be logarithmized to obtain an additive relationship and divided by $\ln(I_{ROE})$. Doing so, we obtain

$$1 = \frac{\ln(I_{EAT/EBT})}{\ln(I_{ROE})} + \frac{\ln(I_{EBT/EBIT})}{\ln(I_{ROE})} + \frac{\ln(I_{EBIT/S})}{\ln(I_{ROE})} + \frac{\ln(I_{S/A})}{\ln(I_{ROE})} + \frac{\ln(I_{A/E})}{\ln(I_{ROE})}. \quad \text{Eq. 4}$$

By multiplying the Eq. 4 by the absolute change of return on equity $\Delta ROE = ROE_2 - ROE_1$ we can express the change of ROE due to the change of an individual factor X/Y as

$$\Delta ROE_{X/Y} = \frac{\ln(I_{X/Y})}{\ln(I_{ROE})} \Delta ROE . \quad \text{Eq. 5}$$

A sum of these five individual impacts equals ΔROE .

Energy distribution sector analysis of selected countries

In this part, we analyse the development of selected performance indicators in the selected countries and the changes in return on equity. We use abbreviations defined in Tab. 1.

Czech republic

The Czech energy market is relatively concentrated. The regional electricity distribution is ensured by only three companies (ČEZ Distribuce, PRE Distribuce and E.ON Distribuce) and the natural gas regional distribution is operated by six DSOs, out of which four are members of RWE Transgas group. The national electricity transmission grid belongs to one monopoly company (ČEPS), as well as the natural gas transportation (Net4Gas).

ROE and ROS have been increasing in the period of 2005-2009, whereas ROA and ROCE have been slightly decreasing within the sector. Asset utilization has had a negative trend, in terms of both asset turnover and fixed asset turnover. The liquidity has been relatively low but its value has been growing. The level of debt has been slightly decreasing but it has not changed significantly. The leverage has been relatively low. An increase of the proportion of debt would increase ROE and reduce the costs of capital.

Tab. 3: Financial ratios of the Czech energy distribution sector

Year	ROE	ROA	ROS	ROCE	AT	FAT	CR	QR	DR	DER	LR
2005	0,077	0,069	0,104	0,103	0,659	0,780	0,971	0,961	0,340	0,515	1,515
2006	0,076	0,069	0,122	0,099	0,569	0,671	1,228	1,215	0,308	0,444	1,444
2007	0,079	0,066	0,134	0,093	0,495	0,606	1,354	1,344	0,286	0,401	1,401
2008	0,082	0,061	0,128	0,092	0,480	0,607	1,197	1,190	0,342	0,521	1,521
2009	0,080	0,061	0,146	0,088	0,421	0,521	1,384	1,376	0,310	0,450	1,450

The impact of the evolution of the change of ROE components on the aggregate indicator is summarized in Tab. 4. The asset turnover has had a decreasing effect on ROE, as well as the debt level. ROE has been growing mainly due to the profit margin, the tax effect and the financial cost ratio. Indeed, the average level of taxation of Czech energy distribution companies has been decreasing in 2005-2009.

Tab. 4: Changes of energy utilities ROE in the Czech Republic

Year	Δ ROE	Tax effect ratio impact	Financial cost ratio impact	Profit margin impact	Asset turnover impact	Leverage ratio impact
2006	-0,0012	0,0014	0,0004	0,0118	-0,0112	-0,0036
2007	0,0030	0,0034	0,0050	0,0075	-0,0106	-0,0024
2008	0,0032	0,0011	0,0020	-0,0040	-0,0025	0,0066
2009	-0,0013	0,0002	0,0021	0,0110	-0,0107	-0,0039

Slovakia

The Slovak energy market is the smallest one in the sample of countries. It is also a very concentrated one. For instance, 98% of the natural gas regional distribution is operated by one single company, SPP Distribúcia. The regional distribution of electricity is ensured by three DSOs (ZSE, SSE and VSE). The monopoly natural gas transportation company is Eustream and the monopoly electricity transmission company is SEPS.

As shown in Tab. 5, ROE has been relatively high but has had a decreasing character, as well as ROA and ROCE. ROS has fluctuated a lot, but in 2009 remained at the same level as in 2005. The asset turnover and the fixed asset turnover have been declining. The measures of liquidity have been relatively high. The level of debt has been stable but relatively low in later years of the period. The advantages of financial leverage effect have been used insufficiently and certainly there is room for improvement in this area.

Tab. 5: Financial ratios of the Slovak energy distribution sector

	ROE	ROA	ROS	ROCE	AT	FAT	CR	QR	DR	DER	LR
2005	0,264	0,180	0,122	0,276	1,479	2,421	1,595	1,581	0,438	0,778	1,778
2006	0,142	0,121	0,194	0,143	0,624	0,784	2,486	2,098	0,162	0,194	1,194
2007	0,207	0,188	0,439	0,157	0,429	0,492	1,619	1,446	0,201	0,251	1,251
2008	0,075	0,062	0,126	0,078	0,493	0,556	1,405	1,075	0,209	0,264	1,264
2009	0,067	0,058	0,119	0,071	0,484	0,643	3,113	1,654	0,205	0,258	1,258

The decline of ROE has been caused by various ROE components. In 2006, it was due to the asset turnover and leverage effect, since the asset turnover had diminished significantly and the level of debt had decreased. In 2008, it was partly due to the decreasing profit margin and the tax effect. In 2009, ROE decreased due to all factors except of the tax effect.

Tab. 6: Changes of energy utilities ROE in Slovakia

Year	Δ ROE	Tax effect ratio impact	Financial cost ratio impact	Profit margin impact	Asset turnover impact	Leverage ratio impact
2006	-0,1214	0,0006	0,0344	0,0914	-0,1696	-0,0782

2007	0,0649	0,0090	-0,0283	0,1407	-0,0646	0,0081
2008	-0,1319	-0,0055	0,0161	-0,1619	0,0180	0,0013
2009	-0,0085	0,0002	-0,0027	-0,0044	-0,0013	-0,0003

Hungary

The Hungarian energy market is comparable to the Czech one in terms of market concentration. Monopoly companies have been operating gas transportation (FGSZ) and electricity transmission (MAVIR) networks, whereas regional distribution has been ensured by three electric utilities and six gas pipelines.

Tab. 7 illustrates the evolution of financial ratios of the sector in Hungary. ROE has been declining as well as ROA, ROS and ROCE. The return on sales cannot be directly influenced by raising prices since they are regulated, but a better costs management could improve this ratio. The asset turnover and the fixed asset turnover have been relatively high, which signalizes a good utilization of assets, but the liquidity has been insufficient. Hungarian energy utilities should raise the volume of liquid funds. The level of debt is slightly higher than the Czech one but still low in comparison with more developed countries.

Tab. 7: Financial ratios of the Hungarian energy distribution sector

	ROE	ROA	ROS	ROCE	AT	FAT	CR	QR	DR	DER	LR
2005	0,117	0,074	0,071	0,134	1,041	1,286	0,636	0,606	0,456	0,837	1,837
2006	0,086	0,076	0,106	0,130	0,722	0,922	0,550	0,536	0,418	0,719	1,719
2007	0,228	0,035	0,049	0,052	0,711	0,804	0,498	0,485	0,340	0,516	1,516
2008	0,059	0,039	0,047	0,059	0,832	0,963	0,731	0,656	0,338	0,511	1,511
2009	0,050	0,033	0,041	0,053	0,805	0,963	0,901	0,653	0,380	0,612	1,612

Tab. 6 examines the year-to-year changes of ROE. In 2005, ROE declined due to a growth of average taxation and interest rate, and due to a decrease of the asset turnover and the level of debt. In 2006, ROE grew significantly because of the financial cost ratio impact. All other factors stagnated or decreased. In 2007 and 2008, ROE decreased as a consequence of declining ROS and financial cost ratio.

Tab. 8: Changes of energy utilities ROE in Hungary

Year	Δ ROE	Tax effect ratio impact	Financial cost ratio impact	Profit margin impact	Asset turnover impact	Leverage ratio impact
2006	-0,0308	-0,0175	-0,0098	0,0399	-0,0368	-0,0067
2007	0,1419	0,0000	0,2751	-0,1128	-0,0021	-0,0183
2008	-0,1683	0,0052	-0,1887	-0,0041	0,0197	-0,0004
2009	-0,0093	0,0072	-0,0107	-0,0076	-0,0018	0,0035

Poland

The Polish energy market is significantly larger than those of the previously described countries. Nevertheless, main distribution system operators remain state-owned. In the field of natural gas distribution and transportation, there are six DSOs, all of them owned by the PGNiG company, which is a joint stock company of the State Treasury, and one TSO (Gaz-System). As to the electricity distribution and transmission, there were 20 DSOs and one TSO (PSE). These companies have been operating within large vertically integrated groups such as PGE, Tauron, Energa or Enea.

As shown in Tab. 9, the evolution of Polish energy distribution ROE has a positive trend, as well as ROA, ROS and ROCE. The asset management ratios have been slightly decreasing but have not changed significantly. In terms of liquidity, the Polish energy sector has been successful. The level of debt has been decreasing, which could have had a negative impact on ROE.

Tab. 9: Financial ratios of the Polish energy distribution sector

	ROE	ROA	ROS	ROCE	AT	FAT	CR	QR	DR	DER	LR
2005	0,051	0,040	0,070	0,076	0,575	0,713	1,783	1,570	0,471	0,889	1,889
2006	0,081	0,046	0,080	0,111	0,570	0,703	1,867	1,612	0,589	1,433	2,433
2007	0,052	0,027	0,048	0,041	0,555	0,679	1,499	1,282	0,350	0,538	1,538
2008	0,053	0,046	0,087	0,070	0,531	0,650	1,280	1,085	0,339	0,513	1,513
2009	0,075	0,070	0,131	0,099	0,535	0,681	1,636	1,441	0,293	0,413	1,413

In 2005, ROE has increased mainly due to a higher leverage and profit margin. The negative effect of declining asset turnover has been negligible. In the following years, the level of debt has been decreasing and the impact of declining asset turnover has been more significant. Nevertheless, ROE has been growing as a consequence of growing profit margin which had a major impact on the ROE change.

Tab. 10: Changes of energy utilities ROE in Poland

Year	Δ ROE	Tax effect ratio impact	Financial cost ratio impact	Profit margin impact	Asset turnover impact	Leverage ratio impact
2006	0,0301	0,0023	0,0034	0,0085	-0,0006	0,0165
2007	-0,0293	0,0309	0,0054	-0,0337	-0,0018	-0,0301
2008	0,0010	-0,0232	-0,0039	0,0312	-0,0022	-0,0009
2009	0,0222	0,0012	-0,0011	0,0261	0,0004	-0,0043

Austria

The Austrian energy market is less concentrated than the markets of the previously analysed post-communist countries. There are three electricity transmission system operators (Verbund, TIWAG and VKW) and more than one hundred distribution system operators, out of which 9 companies are major regional electricity distribution system operators. In the field of natural gas, there are two TSOs and 19 DSOs.

The return on equity in Austria has been relatively high. This can be explained by a higher leverage (cost of debt is less than cost of equity) and asset turnover, ie a more efficient utilization of assets. Nevertheless, the profitability has been decreasing. The liquidity of the Austrian energy sector has been low.

Tab. 11: Financial ratios of the Austrian energy distribution sector

	ROE	ROA	ROS	ROCE	AT	FAT	CR	QR	DR	DER	LR
2005	0,208	0,087	0,127	0,249	0,687	0,926	1,323	1,040	0,650	1,857	2,857
2006	0,191	0,084	0,119	0,219	0,704	0,918	1,198	0,908	0,618	1,617	2,617
2007	0,194	0,080	0,120	0,205	0,670	0,871	0,963	0,710	0,607	1,544	2,544
2008	0,176	0,081	0,104	0,198	0,781	0,969	0,918	0,672	0,589	1,433	2,433
2009	0,109	0,058	0,096	0,140	0,601	0,733	1,091	0,760	0,588	1,430	2,430

The decreasing trend of ROE can be explained by Tab. 10. Leverage ratio, ie the level of debt was declining over the whole period. The profit margin was also declining except of 2006. The changes of asset turnover played major roles in changes of ROE in 2007 and 2008.

Tab. 12: Changes of energy utilities ROE in Austria

Year	Δ ROE	Tax effect ratio impact	Financial cost ratio impact	Profit margin impact	Asset turnover impact	Leverage ratio impact
2006	-0,0171	-0,0064	0,0142	-0,0122	0,0048	-0,0175
2007	0,0027	0,0098	0,0062	0,0018	-0,0096	-0,0054
2008	-0,0175	0,0073	-0,0189	-0,0259	0,0283	-0,0082
2009	-0,0675	-0,0076	-0,0112	-0,0120	-0,0365	-0,0002

Germany

The German energy market is the largest one in the region and probably also the most developed one. There are four electricity TSOs (EnBW Transportnetze, TenneT, Amprion and 50Hertz Transmission) and about 900 DSOs, but only around 120 of them control 90% of the electricity distribution market. The number of natural gas TSOs is unclear due to the disputed

interpretation of the German expression "Fernleitungsnetzbetreiber". There are around 700 natural gas DSOs out of which about 70 control 80% of the gas distribution market.

The level of debt has been high in the industry and the highest amongst the countries examined in this paper. The liquidity has been greater than in Austria but still not entirely sufficient. Moreover, it has been decreasing except of the last year. The asset utilization has had a positive growth trend. The trend of profitability evolution has not been clear.

Tab. 13: Financial ratios of the German energy distribution sector

	ROE	ROA	ROS	ROCE	AT	FAT	CR	QR	DR	DER	LR
2005	0,110	0,058	0,106	0,177	0,550	0,795	1,490	1,367	0,671	2,038	3,038
2006	0,101	0,057	0,094	0,166	0,605	0,805	1,060	0,913	0,656	1,910	2,910
2007	0,118	0,075	0,124	0,206	0,604	0,797	1,097	0,962	0,638	1,764	2,764
2008	0,067	0,040	0,062	0,162	0,652	0,956	1,000	0,900	0,752	3,038	4,038
2009	0,132	0,082	0,134	0,290	0,608	0,854	1,159	1,024	0,719	2,556	3,556

ROE has declined in 2005 and 2007 and increased in 2006 and 2008. The decreases have been partially caused by the financial cost ratio and partially by ROS. In 2005, also the leverage played a minor role in the decrease. ROS has been the most important cause of the ROE increases in 2006 and 2008.

Tab. 14: Changes of energy utilities ROE in Germany

Year	Δ ROE	Tax effect ratio impact	Financial cost ratio impact	Profit margin impact	Asset turnover impact	Leverage ratio impact
2006	-0,0085	0,0115	-0,0129	-0,0128	0,0102	-0,0046
2007	0,0165	0,0054	-0,0131	0,0301	-0,0003	-0,0056
2008	-0,0512	-0,0047	-0,0248	-0,0627	0,0069	0,0341
2009	0,0650	-0,0036	0,0128	0,0744	-0,0066	-0,0122

Switzerland

The Swiss energy market is specific since only electricity distribution tariffs are regulated. Natural gas plays only a minor role in the Swiss energy industry. Around 75% of electric energy is imported from abroad. The transmission grid is operated by Swissgrid, whereas the most of electricity distribution is ensured by several large vertically integrated companies, called "Überlandwerke" (for instance, Alpiq, Axpo or CKW). However, there are hundreds of small DSOs operating in the country. It is important to note that the tariff regulator, ElCom, was founded only in 2007.

The profitability in terms of ROE and ROCE was increasing since 2005, peaked in 2007 and has been decreasing since then. Asset utilization has been decreasing since 2006, which, as we shall see, has been the major cause of the decline in ROE. The liquidity of Swiss energy utilities has been good. As in the case of other Western countries, the level of debt has been higher which has had a positive effect on ROE.

Tab. 15: Financial ratios of the Swiss energy distribution sector

	ROE	ROA	ROS	ROCE	AT	FAT	CR	QR	DR	DER	LR
2005	0,131	0,068	0,097	0,158	0,697	1,091	1,626	1,577	0,572	1,337	2,337
2006	0,175	0,103	0,126	0,227	0,814	1,297	1,850	1,796	0,545	1,200	2,200
2007	0,185	0,098	0,118	0,208	0,827	1,317	1,795	1,746	0,530	1,128	2,128
2008	0,125	0,080	0,114	0,175	0,702	1,193	1,576	1,536	0,544	1,193	2,193
2009	0,100	0,062	0,131	0,139	0,473	0,766	1,486	1,452	0,553	1,239	2,239

The increase of ROE in 2005 was caused by an increase of the profit margin and the asset turnover. ROE also increased in 2006, but due to the financial cost ratio. The influence of other factors was rather negative or negligible. Financial cost ratio and the asset turnover have been the major causes of a further decline in ROE in 2007. In 2008, ROE continued to decline as a consequence of the decline in the asset turnover. In order to prevent further decline in ROE, Swiss energy utilities should improve their asset management.

Tab. 16: Changes of energy utilities ROE in Switzerland

Year	Δ ROE	Tax effect ratio impact	Financial cost ratio impact	Profit margin impact	Asset turnover impact	Leverage ratio impact
2006	0,0438	0,0021	-0,0128	0,0401	0,0236	-0,0092
2007	0,0100	-0,0011	0,0263	-0,0120	0,0027	-0,0059
2008	-0,0596	-0,0030	-0,0301	-0,0060	-0,0251	0,0046
2009	-0,0246	0,0055	-0,0039	0,0157	-0,0442	0,0023

Conclusion

In this paper we examined financial indicators of the energy distribution industries in Central Europe and the changes in their profitability.

Traditionally, energy utilities have had a relatively low asset turnover, which is compensated by a relatively high profit margin. A higher level of debt is acceptable since their financial risk is reduced by a stable income.

The results of our analysis indicate that generally, debt is used to a lesser extent in Eastern countries of the region (Czech Republic, Slovakia, Poland and Hungary). Since debt is

generally less costly than equity, the Western companies reduce the cost of their capital by increasing the proportion of debt. Eastern energy markets are also more concentrated than the Western ones.

The Czech energy utilities should improve their asset management in order to raise the asset turnover which would have a positive influence on their profitability. They should also raise the proportion of liquid funds to reduce financial risk and improve short-term solvency.

The Slovak firms have had high liquidity ratios which indicates a relatively low return on their liquid assets, which could have been used in a more economic way. The negative impact of declining asset turnover on ROE signalizes that asset utilization should be improved.

The Hungarian companies are using more debt, which is positive, but their low liquidity increase the financial risk and thus their cost of equity. A declining profit margin had a negative effect on ROE, which means that Hungarian energy utilities should better manage their costs, as the regulated tariffs cannot be directly influenced. Hungarian utilities had a good performance in terms of the asset management.

The Polish utilities should raise their leverage and asset utilization since it has been decreasing. In terms of profitability and liquidity, the Polish energy distribution sector had a good performance. The growing profit margin had a positive effect on ROE.

The Austrian companies had a higher level of debt, which has been decreasing and therefore reducing their ROE. Other factor (asset turnover and profit margin) also played an important role in the decreasing profitability of the firms. The liquidity of Austrian companies has been low.

The German utilities had the highest leverage and an increasing asset management performance. Their liquidity could be improved by using more liquid assets.

The Swiss companies have been doing well in terms of liquidity and leverage but their asset utilization has been an important cause of the declining ROE in the last two years.

The analysis did not include all of the regulated companies since not all data was available. We did not deal with capital market analysis ratios since the companies are often not listed on stock exchanges.

The monitoring of financial indicators is important for regulatory bodies in order to ensure a good quality of the service provided which is often essential and has a strategic importance for the national economy or security. Some financial indicators are also used in regulatory pricing formulas (for instance, the allowed rate-of-return value is influenced by the D/E ratio).

Bibliography

1. KISLINGEROVÁ, E., HNILICA, J. *Finanční analýza krok za krokem*. Praha : C.H. Beck, 2005.
2. KAHN, A. *The Economics of Regulation: Principles and Institutions*. Cambridge, Mass.: MIT Press, 1988.
3. MACHEK, O., HNILICA, J. *Metody regulace síťových odvětví*. Ekonomika a management, 2010. Vol. 4, No 3. 9p.
4. SWIERCZEK, F. W. *Measuring the Performance of Public Enterprises: An Example for Developing Countries*. The Asian Journal of Public Administration, 1989. Vol. 11, No. 1. 25p.
5. KESSIDES, I. Hungary: "A Regulatory and Structural Review of Selected Infrastructure Sectors." *World Bank Technical Paper no. 474*. Washington DC, 2000.
6. HANEY, A., POLITT, M. "Efficiency Analysis of Energy Networks : An International Survey of Regulators." *Energy Policy*. Elsevier, vol. 37(12), pp. 5814-5830. 2009.
7. Czech Republic. Energetický regulační úřad. "Závěrečná zpráva ERÚ o metodice regulace III. regulační období." Prague: ERÚ, 2009.
8. Slovakia. Úrad pre reguláciu sieťových odvetví. "Výnos Úradu pre reguláciu sieťových odvetví z 10. júna 200 č. 4/2009." Bratislava: ÚRSO, 2009.
9. Hungary. Magyar Energia Hivatal. "Methodology for determination of approved operating costs by benchmarking." Budapest: MEH, 2009.
10. Switzerland. Verband Schweizerischer Elektrizitätsunternehmen. "Kostenrechnungsschema für Verteilnetzbetreiber der Schweiz." VSE, 2009.

This paper was written with financial support from the Internal Grant Agency of the University of Economics in Prague, project No. F3/22/2011 "Regulation of energy utilities in Central Europe and the possibilities for improvement."