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INVESTMENT ATTARCTIVENESS OF RUSSIAN ENERGY BUSINESS

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The liberalization of the Russian energy market intensifies the struggle of companies in this sector to attract large investment capital. However, the practical lack of specific methods for assessing the investment attractiveness of energy companies directly requires adapting already developed approaches to the requirements of this sector. The article is devoted to studying the investment attractiveness of Russian energy companies from the point of view of various methods, as well as the level of loyalty of these methods to the sector. As a methodological basis, three approaches that are most common in practice were proposed: the regulatory approach, the seven-factor model for assessing the return on net assets, and the calculation of economic value added. The studied energy companies were combined into two groups, depending on the type of business: generation, as well as energy service and repair. It allowed us to assess the loyalty level of approaches to these types of business. Research veracity is confirmed by the practical implementation. The results of the study can be used by the management of energy companies, investors and analysts in making financial decisions, as well as in the scientific community for developing specific methodological approaches for assessing the investment attractiveness of energy companies.

Keywords: energy; investment attractiveness; sustainability; regulatory approach; return on net assets; economic value added; energy generation; energy service; energy repair; modeling.

Introduction

A review of the scientific literature [1, 2] showed that at the present time there are no objective formalized approaches to assessing the investment attractiveness of the industry's companies in the Russian electric power sector. In practice, their availability is crucial when developing investment policies, as well as when attracting and implementing private investment. Therefore, there is a question of the possibility of applying the already developed approaches to assessing the attractiveness of Russian energy companies. To solve this problem, we analyzed the investment attractiveness of Russian energy companies using three approaches [3]: regulatory, return on net assets, economic value added. Each of the presented approaches is based on an assessment of the financial condition of companies without taking into account their technical and economic analysis.

1. Regulatory Approach

The purpose of this analysis [3] is to obtain an objective assessment of solvency, financial stability, business and investment activity, as well as operating efficiency. These

criteria allow a comprehensive study of the energy company's investment attractiveness based on financial statements. The conditions (1–22) for the practical evaluation: $K_1 = GR/M$; $K_2 = R/GR$; $K_3 = NW$; $K_4 = D/K_1$; $K_5 = BL/K_1$; $K_6 = CD/K_1$; $K_7 = SFD/K_1$; $K_8 = ID/K_1$; $K_9 = StL/K_1$; $K_{10} = CA/StL$; $K_{11} = E - NCA$; $K_{12} = K_{11}/CA$; $K_{13} = E/A$; $K_{14} = CA/K_1$; $K_{15} = CAP/K_1$; $K_{16} = NWC/K_1$; $K_{17} = NOPAT/CA$; $K_{18} = OP/R$; $K_{19} = K_1/K_3$; $K_{20} = K_1/NCA$; $K_{21} = NWC/NCA$; $K_{22} = TP/TA$. Where GR is gross revenue; M is a number of months in period; R is revenue; NW is a average number of workers; D is amount of debt capital; BL is total amount of long- and short-term banks' loans; CD is debt to other companies; SFD is debt to the state funds; ID is an internal debt of company; StL is short-term loans; CA is current assets; E is amount of equity capital; NCA is non-current assets; A is total amount of assets; CAP is current assets in production; NWC is net working capital; NOPAT is net operating profit adjusted taxes; OP is operating profit; TP is all types of taxes paid; TA is all types of taxes accrued.

2. The Seven-factor Model for Assessing the Return on Net Assets

The seven-factor model for assessing the return on net assets is based on the assumption that the main criterion for an energy company's investment attractiveness is the return on net assets calculated using the equation (1). The positive dynamics of RONA indicates the successful development and growth of attractiveness of the energy company for investors.

$$RONA = \frac{NI}{R} \cdot \frac{R}{CA} \cdot \frac{CA}{CL} \cdot \frac{CL}{DI} \cdot \frac{DI}{CI} \cdot \frac{CI}{D} \cdot \frac{D}{A}, \tag{1}$$

where RONA is return on net assets; NI is net income; CL is current liability; DI is debtor indebtedness; CI is creditor indebtedness.

3. The Method of Economic Value Added (EVA)

The method of economic value added (EVA) allows us to estimate the excess of net operating profit adjusted capital expenditures and taxes over the weighted average cost of capital. The higher the EVA index indicates the higher the efficiency of the energy company's use of capital. This indicator can be evaluated in one of three ways (2) – (4):

$$EVA = NOPAT - WACC \cdot CE, \tag{2}$$

where EVA is economic value added; NOPAT is net operating profit adjusted taxes; WACC is weighted average cost of capital; CE is capital employed.

$$EVA = (EBIT - Taxes) - WACC \cdot CE, \tag{3}$$

where EBIT is earnings before interest and taxes; Taxes is all types of taxes accrued and/or paid.

$$EVA = (ROIC - WACC) \cdot CE, \tag{4}$$

where ROIC is return on invested capital.

When assessing the WACC, the conditions (5) are taken into account:

$$\begin{cases} WACC = \frac{E}{C} \cdot y + \frac{D}{C} \cdot b \cdot (1 - T), \\ C = D + E, \\ y = \frac{NI}{E}, \\ CE = C, \end{cases} \tag{5}$$

where y is cost of equity capital (%); b is cost of debt capital (%); T is tax rate profit of energy company (%); C is total amount of capital; NI is net income of energy company.

4. Practical Assessment the Investment Attractiveness of Russian Energy Sector

The objects selected are Russian energy companies that cover such areas of energy business as generation (PJSC "Quadra - Power Generation", PJSC "Unipro"), as well as energy services and repairs (JSC "ElectroSetService ENES" (ROSSETI FGC UES), JSC "Energoremont" (PJSC "TPlus")). The attractiveness assessment was conducted on the basis of official annual reports for the period from 2016 to 2018. The calculations results are presented in Tables 1–9 (EVA was evaluated using the equation (3)).

Table 1

Assessment of the economic value added of energy companies (2016)

Indicator	TQuadra	Unipro	ElectroSet Service	Energo remont
EBIT	296 186	13 709 048	200 498.5	2 484.5
Taxes	481 630	-2 663 818	9249	-262
WACC	0.0409	0.1005	0.0028	-0.0469
CE	56 650 009	109 766 000	628 286	-59 286
EVA	-1 542 342	11 222.4	198 714.1	-300.47

Table 2

Assessment of the economic value added of energy companies (2017)

Indicator	TQuadra	Unipro	ElectroSet Service	Energo remont
EBIT	3 535 687	36 829 201	7 643.22	-44.23
Taxes	60 283	-7 825 916	3 718	100
WACC	0.0674	0.2365	0.0189	-0.0617
CE	64 390 467	125 467 280	693 721	-60 321
EVA	-741 951.4	-674 996.3	-5 516.13	-3763.46

Therefore, in generation, the regulatory approach and the seven-factor model rated PJSC "Unipro" as an investment attractive (primarily owing to the indicators of the repayment rate, total debt, internal debt, as well as positive RONA), and the EVA method – PJSC "Quadra" with a small excess of this criterion by the company in 2018. In the field of energy services and repairs, the results were more contradictory: the regulatory approach highly appreciated JSC "ElectroSetService ENES"; the seven-factor model –

Table 3

Results of assessment of energy companies' investment attractiveness based on the regulatory approach (2016)

Indicator	TQuadra	Unipro	ElectroSet Service	Energo remont
K_1, k rur	4 108 977	6 760 798	30 469	1 152
K_2, %	93.02	98.7	7.37	2.78
K_3, ppl.	11 184	4 362	1 245	2 253
K_4, mo.	11.12	2.3	70.28	66.72
K_5	8.93	0.91	6.94	21.18
K_6	1.94	0.71	32.30	63.07
K_7	0.35	0.19	17.43	3.53
K_8	0.45	0.49	26.09	24.76
K_9	5.14	1.39	70.25	66.69
K_{10}	0.63	1.5	1.00	0.09
K_{11}, k rur	-32 431 566	-1 431 817	6 052	-69 951
K_{12}	-2.45	-0.1	0.001	-10.15
K_{13}	0.41	0.87	0.27	-3.39
K_{14}	3.22	2.09	70.48	5.98
K_{15}	0.88	0.35	15.85	0.08
K_{16}	2.34	1.74	54.63	5.90
K_{17}	-0.12	0.43	0.27	1.37
K_{18}	0.04	0.21	-0.03	0.09
K_{19}	367.4	1 549.9	24.47	0.51
K_{20}	0.063	0.064	0.05	0.11
K_{21}	0.38	0.18	0.92	0.89
K_{22}	0.73	0.29	1.89	0.17

Table 4

Assessing the return on net assets of energy companies (2016)

Indicator	TQuadra	Unipro	ElectroSet Service	Energo remont
NI/R	-0.03174	0.1293	0.19866	0.17874
R/CA	-0.03174	0.1293	0.19866	0.17874
CA/CL	0.62691	1.50092	1.00336	0.08969
CL/DI	2.41305	1.0391	1.59261	14.64645
DI/CI	1.09823	1.86637	0.87597	0.10019
CI/D	0.17455	0.31198	1337.6	1539.5
D/A	0.58727	0.13072	0.00041	0.00194
$RONA$	-0.02012	0.08801	-0.00635	-0.0364726

JSC "Energoremont"; the EVA method showed absolute equality of companies. However, taking into account the EVA dynamics by 2018, priority was given to JSC "Energoremont".

Table 5

Results of assessment of energy companies' investment attractiveness based on the regulatory approach (2017)

Indicator	TQuadra	Unipro	ElectroSet Service	Energo remont
K_1, k rur	4 282 571	6 594 6645	23 068	791
K_2, %	98.6	99	8.33	3.66
K_3, ppl.	10 849	4 357	1 185	2 238
K_4, mo.	10.36	1.84	67.23	101.68
K_5	8.57	0.85	9.89	33.26
K_6	1.46	0.79	38.91	83.68
K_7	0.42	0.23	13.0	6.153
K_8	0.57	0.41	17.21	39.59
K_9	3.04	0.99	67.17	101.64
K_{10}	0.87	3.21	1.11	0.12
K_{11}, k rur	-33 002 278	9 004 315	172 084	-70 741
K_{12}	-2.9	0.42	0.10	-7.32
K_{13}	0.43	0.91	0.31	-3.01
K_{14}	2.65	3.21	74.69	12.23
K_{15}	0.87	0.62	25.78	0.03
K_{16}	1.78	2.59	48.91	12.20
K_{17}	0.05	1.54	0.29	0.94
K_{18}	0.09	70.28	-0.06	0.02
K_{19}	394.7	1 513.6	19.47	0.35
K_{20}	0.065	0.059	0.04	0.08
K_{21}	0.33	0.27	0.94	0.88
K_{22}	0.61	0.59	-0.30	-0.08

Table 6

Assessing the return on net assets of energy companies (2017)

Indicator	TQuadra	Unipro	ElectroSet Service	Energo remont
NI/R	0.01172	0.38079	-0.46015	-2.06175
R/CA	4.52426	3.73685	-0.0821	0.05191
CA/CL	0.87159	3.21225	1.11203	0.12031
CL/DI	1.87204	0.63886	1.61175	8.99072
DI/CI	1.11302	1.99258	0.78108	0.16576
CI/D	0.141	0.42545	823.8	1586.3
D/A	0.57297	0.09218	0.00067	0.00169
$RONA$	0.00778	0.22819	0.02902	-0.05161

Conclusion

1. The actual problem of practical study of the investment attractiveness of Russian energy companies on the basis of a set of approaches is solved.

2. Loyalty of the applied approaches to various types of energy business is investigated.

Table 7

Results of assessment of energy companies' investment attractiveness based on the regulatory approach (2018)

Indicator	TQuadra	Unipro	ElectroSet Service	Energo remont
K_1, k rur	4 447 019	6 776 255	32 355	1 606
K_2, %	99.1	98.6	8.27	1.96
K_3, ppl.	10 518	4 336	1 165	2 210
K_4, mo.	10.32	72.07	82.34	27.38
K_5	8.18	0.94	18.45	18.77
K_6	1.54	0.93	33.79	22.03
K_7	0.43	0.32	26.27	7.78
K_8	0.87	0.43	26.73	21.55
K_9	7.29	1.16	82.32	27.37
K_{10}	0.31	2.81	1.05	0.38
K_{11}, k rur	-56 311 730	7 457 272	132 035	-27 489
K_{12}	-5.66	0.35	0.05	-1.67
K_{13}	0.42	0.9	0.19	-0.72
K_{14}	2.28	3.17	86.42	10.26
K_{15}	0.41	1.18	21.25	0.01
K_{16}	1.86	1.99	65.17	10.24
K_{17}	0.09	0.88	0.14	0.53
K_{18}	0.13	0.26	-0.01	0.32
K_{19}	422.8	1 562.78 2	7.78	0.73
K_{20}	0.064	0.058	0.07	70.18
K_{21}	0.37	0.32	0.90	0.97
K_{22}	0.49	0.39	0.51	1.76

Table 8

Assessing the return on net assets of energy companies (2018)

Indicator	TQuadra	Unipro	ElectroSet Service	Energo remont
NI/R	0.01816	0.23210	2.71108	3.439
R/CA	5.2741	3.78788	-0.00894	0.73994
CA/CL	0.3123	2.80751	1.04979	0.37483
CL/DI	4.55119	1.00128	1.70839	2.78504
DI/CI	1.04089	1.24549	0.79282	1.16552
CI/D	0.14973	0.43764	3480.4	902.6
D/A	0.57148	0.10089	0.00017	0.00059
$RONA$	0.01213	0.13590	-0.0206	1.64229

3. The results are recommended to be used in the forming of strategic programs for the development of Russian energy.

Table 9

Assessment of the economic value added of energy companies (2018)

Indicator	TQuadra	Unipro	ElectroSet Service	Energo remont
EBIT	3 521 990	23 015 634	2 114.35	-711.11
Taxes	17 015	-4 415 780	6 262	-2 597
WACC	0.0719	0.1454	-0.0219	1.6251
CE	47 528 911	131 222 410	625 043	-18 423
EVA	124 290.4	-474504.3	15 821.75	29 228.48

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ИНВЕСТИЦИОННАЯ ПРИВЛЕКАТЕЛЬНОСТЬ РОССИЙСКОГО ЭНЕРГЕТИЧЕСКОГО БИЗНЕСА

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Либерализация российского энергорынка обостряет борьбу компаний данного сектора за привлечение крупных инвестиционных ресурсов. Однако практическое отсутствие специфических методов оценки инвестиционной привлекательности непосредственно энергокомпаний требует адаптации уже разработанных подходов под требования данного сектора. Статья посвящена изучению инвестиционной привлекательности российских энергокомпаний с позиции различных методик, а также степени лояльности данных методик к сектору. В качестве методологической основы предложены три наиболее распространенных на практике подхода: нормативно-правовой, семифакторная модель оценки рентабельности активов, а также расчет экономической добавленной стоимости. Изучаемые энергокомпании объединены в две группы, в зависимости от типа бизнеса: генерация, а также энергосервис и ремонт, что позволило оценить степень лояльности подходов к данным типам бизнеса. Достоверность полученных результатов подтверждена их практической реализацией. Итоги исследования рекомендуется использовать менеджментом энергокомпаний, инвесторам и аналитикам в процессе принятия финансовых решений, а также в научном сообществе при разработке специфических методических подходов оценки инвестиционной привлекательности энергокомпаний.

Ключевые слова: энергетика; инвестиционная привлекательность; устойчивость; нормативно-правовой подход; рентабельность активов; экономическая добавленная стоимость; энергогенерация; энергосервис; энергоремонт; моделирование.

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