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## ASSESSMENT OF INVESTMENT EFFICIENCY IN THE UTLM "UKRTELECOM" SHARES

### ОЦІНКА ЕФЕКТИВНОСТІ ІНВЕСТИЦІЙ В АКЦІЇ UTLM КОМПАНІЇ «УКРТЕЛЕКОМ»

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Андрієнко В.М., Соколовська О.О. «Оцінка ефективності інвестицій в акції UTLM компанії «Укртелеком». Науково-методична стаття.

Стаття присвячена оцінці ефективності інвестування в акції компанії ПАТ «Укртелеком». Використані дані бухгалтерського балансу та ціни акції UTLM за період 2015-2017 роки. Проведено аналіз статей бухгалтерського балансу, на основі якого визначено інвестиційна привабливість компанії. Динаміка показників свідчить про те, що у компанії є деякі проблеми. Також проведено аналіз біржової діяльності ПАТ «Укртелеком». Позитивна динаміка ЕВІТДА свідчить про те, що є попит на цінні папери «Укртелеком» на ринку UX. Обчислені і проаналізовані основні коефіцієнти ефективності інвестицій в акції UTLM з точки зору прибутковості і ризику. Показано, що на даному інтервалі часу ризику інвестування менше, ніж прибутковість акцій, що є привабливим для інвесторів. Також встановлено, що має місце кластеризація волатильності прибутковості акцій, що вказує на можливість різких стрибків. Сформульовано висновки за отриманими результатами.

Ключові слова: ПАТ «Укртелеком», інвестиції, UTLM, акції, ціна, прибутковість, коефіцієнти ефективності

Andrienko V.M., Sokolovska O.O. Assessment of investment efficiency in the UTLM "UKRTELECOM" shares. Scientific and methodical article.

The article is devoted to the assessment of investment efficiency in PJSC "Ukrtelecom" shares. Accounting balance sheet data and stock prices UTLM for the period 2015-2017 are used. The accounting balance sheet items analysis on the basis of which determined the company's investment attractiveness. Indicators dynamics testifies that the company has some problems. PJSC "Ukrtelecom" stock exchange activity analysis was also conducted. EBITDA positive dynamics indicates that there is a demand for the Ukrtelecom UX market securities. The main factor of investments efficiency in shares UTLM from the viewpoint of profitability and risk are calculated and analyzed. It is shown that in this time interval in the investment risks is less than shares profitability that is attractive to investors. It is also established that there is a clustering of shares profitability volatility, which indicates the possibility of dramatic upturns. Conclusions according to the obtained results are made.

Keywords: Ukrtelecom PJSC, investment, UTLM, share, price, profitability, efficiency ratios

The main investment purpose is to realize a profit on the long run. Investment involves passive monitoring and the current market situation analysis in order to react in time to get rid of potentially losing shares. In today's economic and political instability, the appropriate problem investment becomes particularly urgent. Long-term share investments can now become a great tool for generating additional passive income. To realize the main investment purpose in the investment management, methods are used to evaluate the investments effectiveness. The effectiveness ratios calculation allows one to identify the most effective and resulting management strategies in the stock market or to review and modify existing ones, as well as minimize the risks of investing in financial instruments. The Ukrtelecom PJSC operates securities on the Ukrainian Stock Market (UX), which is regulated by a securities management group. The company is an emitter of UTLM shares. Therefore, assessment of investment efficiency in the UTLM "UKRTELECOM" shares is a very important task.

#### Analysis of recent research and publications

At present, there are a fairly large number of research articles, where theoretically and methodologically a wide range of investment management issues are developed. A huge contribution to the scientific views development on this problem was made by U. Sharp, J. Hordon (Sharpe 2007), H. Aleksander (Aleksander 2007), H. Markovits (Markowitz 1987), P. Samuelson (Samuelson 1972), E. Fama (Fama 1996) [1-4].

The issue of management efficiency of investment activities was investigated by such foreign scientists as V. Berens, L.J. Hitman, M.D. Dzhonk, K. Faltsman, T.S. etc. Research and development of enterprises investment problems was carried out in the domestic scientists-economists' researches: V.M. Khobta, A.M. Yastremska, V.M. Hrynova [5-7],

Y.A. Blank, N.M. Huliaieva, A.A. Peresada, Y.V. Danylenko, A.V. Haidutskyi, A. Muzychenko, O.K. Drahan, V.H. Fedorenko and others.

But the assessment problem of the investment efficiency in stock market instruments is quite complex, and existing methodological approaches do not sufficiently take into account the realities of economic globalization. Therefore, research in this field is continuing.

The aim of the article is assessment of investment efficiency in the UTLM "UKRTELECOM" shares in the current conditions.

### The main part

The proper share selection for investing involves preliminary analysis of the issuer company. The ultimate goal of such an analysis is to determine the investment attractiveness degree of the analyzed company. The accounting balance sheet figures allow an investor to answer the question of whether to invest in its shares and what risk it may entail [8]. Tab. 1 shows the accounting balance sheet figures dynamics for 2015-2017 by PJSC "Ukrtelecom", which should be used in the analysis.

Table 1. The PJSC "Ukrtelecom" accounting balance sheet figures dynamics

Indicator	2015	2016	2017
Current assets (UAH)	12 062 877	13 001 245	14 343 372
Non-current assets (UAH)	9 312 347	9 744 054	10 044 043
Fixed assets (UAH)	8 983 451	8 839 758	8 965 922
Reserves amount (UAH)	120 564	143 940	136 143
Accounts Receivable (UAH)	1 323 393	1 401 834	1 594 836
Amount of current liabilities (UAH) (UAH)	2 295 526	2 729 547	3 916 094
Equity (UAH)	8 374 773	9 277 207	8 866 891

Source: own elaborations

From the tab. 1 it can be seen that a number of indicators show now growth, then a decrease, for example, equity. The stockholders' equity determines the share capital dynamics, and the share capital is an indicator of the company's successful work. If there are no additional issues of shares, then along with the share capital growth, the profit per share increases. The change in tendencies is due to the fact that today the influence of both the negative (the situation

around the change of owner) and the positive factors of the activity of PJSC "Ukrtelecom" has increased. Therefore, the company has some problems, the risks of investing in its shares fluctuate greatly. But the gradual growth of current and non-current assets is a positive sign.

Fig. 1 shows the daily prices graph of UTLM shares for 2015-2017 at the close of trading, and in tab. 2 – the result of stock

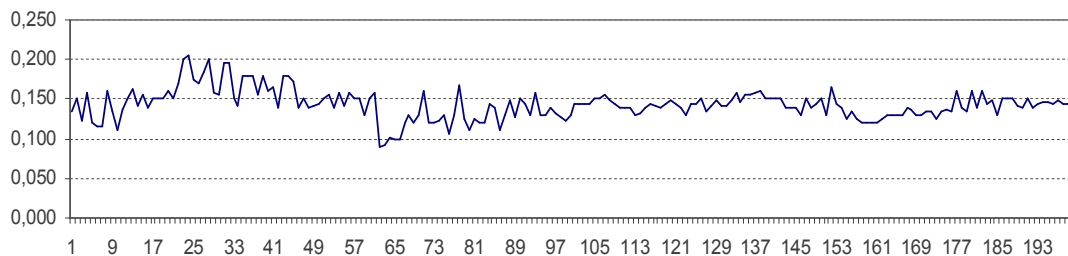


Fig. 1. UTLM Share Price Graph

Source: own elaboration

The graph shows that the stock price trend was constantly changing, and in late 2017 one can see a slow growth. The positive dynamics of the EBITDA indicator from tab. 2 shows that there is a demand for

Ukrtelecom securities on the UX market. Shares are attractive to investors, but the market price (UAH 0.25) contradicts the generally accepted profitability of the purchase (the fair price is UAH 0.54).

Table 2. Ukrtelecom exchange activities result

Indicator	2010	2011	2012	2013	2014	2015
1	2	3	4	5	6	7
Revenue.mln. UAH	6749.3	6767.47	6947.52	6433.15	6530.73	6394.76
Revenue from,%	-1.77%	0.27%	2.66%	-7.4%	1.52%	6.77%
EBITDA.mln. UAH	1315.23	1654.99	16.95.84	1393.87	1391.91	1486.21
Profitability by EBITDA, %	19.49%	24.46%	24.41%	20.89%	21.31%	23.24%
Net profit. mln. UAH	-258.77	-136.59	366.8	84.73	238.08	444.72

Continuation of the Table 2

1	2	3	4	5	6	7
Profitability, %	-3.83%	-2.02%	5.28%	1.32%	3.65%	6.95%
P/S	1.51	1.23	0.43	0.32	0.44	0.35
P/E	-39.37	-60.75	8.17	24.31	11.96	5.05
EV/EBITDA	9.88	6.61	3.21	3.04	3.49	2.69

Source: own elaboration

The the multipliers meaning listed in the table is:

- EBIDTA – Earnings Before Interest, Tax, Depreciation, and Amortization;
- P/E = price/earnings ratio or price-to-earnings ratio: a company's share price in relation to its profits;
- EV/EBITDA = embedded value/ EBIDTA. An indicator that compares the value of an enterprise

with its EBITDA. Used to estimate the payback period of an investment.

When analyzing a company for the purpose of investing in its shares, one analyzes the ratios of investment efficiency, which can be divided into two groups: absolute and relative [1]. The key indicators in the analysis are risk and profitability. The table below shows the ratios classification by different groups: the indicator type and the estimate nature [8].

Table 3. The Indicators Classification

Ratios	The indicator type	The nature of the assessment	
		Relative	Absolute
Arithmetic average yield	Profitability		+
Standard deviation	Risk		+
Sharpe ratio	Profitability/ Risk	+	
Treynor ratio	Profitability/ Risk	+	
Beta Ratio	Risk	+	
Alpha Jensen Ratio	Profitability		+
Modigliani Ratio	Profitability/ Risk	+	

Source: own elaboration

Profitability is the most important investment indicator (shares, bonds, futures, etc.). The relative share profitability (as a percentage) at the moment Time t is based on the following formula:

$$R_t = \text{LN}\left(\frac{A_t}{A_{t-1}}\right) * 100. \quad t = \overline{2, n}, \quad (1)$$

where  $i$  – is the asset price respectively at time t and the previous moment t-1.  $n$  is the number of days.

The Ukrtelecom (UTLM) share profitability estimate was calculated based on daily stock price data at the close of trading. The simplest way to predict stock returns is to use mathematical expectation. To estimate the future (expected) relative price ratio  $r_p$ , stocks use the arithmetic mean of past returns  $R_t$ . In this case  $r_p = 10\%$ .

UTLM share risk assessment. The share risk implies its volatility  $\sigma_p$  (this interpretation was introduced by G. Markowitz). That is, the more sensitive the quotes change, the higher the share risk. In order to calculate the risk, it is necessary to calculate the share profitability standard deviation  $R_t$  from the average  $r_p$ . we get  $\sigma_p = 11\%$ .

Fig. 2 shows the UTLM share profitability graph. One can see from the figure that volatility is clearly time-dependent, i.e. high volatility periods alternate with quieter periods when volatility is relatively small. Such a combination of these properties is a characteristic feature of the financial series. This situation is called "volatility clustering" or "heteroskedasticity effect" and indicates a high probability of extreme values occurrence.

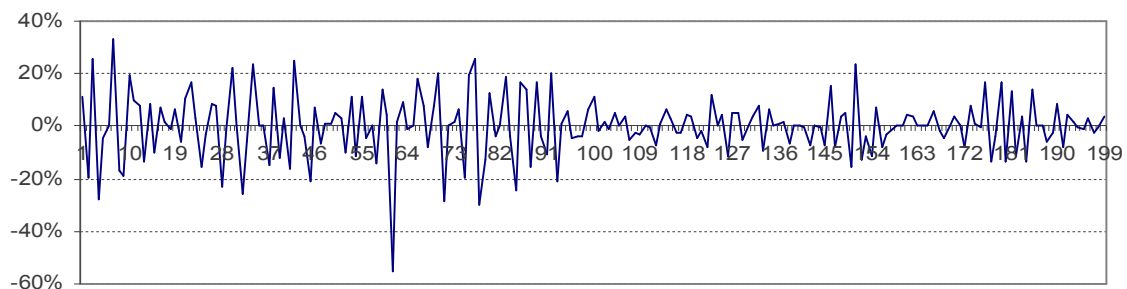


Fig. 2. The UTLM share profitability graph

Source: own elaboration

The next indicator.Sharp ratio –is the most common stock market investment performance ratio, introduced by the economist W. Sharp in 1966. This ratio is used to analyze stocks, futures, investment portfolios, strategies. Sharp ratio shows the relationof return to investment risk. The formula for the Sharpe ratio calculation is as follows [9]:

$$\text{Sharp ratio} = \frac{r_p - r_f}{\sigma_p}, \quad (2)$$

where  $r_p$  – average share profitability

$r_f$  –average risk-free asset return

$\sigma_p$  –standard share deviation (share risk).

Sharp ratio shows the relationof return on investment to risk.The economic sense of the ratio is that an investor needs to get a return higher than the minimum level, otherwise the investment is meaningless,so the share profitability and the risk-free asset are compared.By the risk-free return on the asset, in practice, take:

- profitability on the bank deposit of the most reliable banks;
- profitability on government securities (e.g. bonds);
- the NBU key interest rate size.

Let’sconsider the Sharp ratioanalysisin more detail. The table below provides the investments analysis based on Sharp’s metric, depending on its value.

Table 2. Investment efficiency assessmentby Sharp rati

Ratiovalue	Efficiency assessment
Sharpratio>1	High degree of efficiency. investment
0<Sharpratio<1	The investing risk level in this investment is higher than its profitability level. investing is not rational
Sharpratio<0	Investment is not rational because the return level on an investment is less than the of return level on a risk-free asset

Source: own elaboration

For the average return on a risk-free asset, let’stake the return rate onbonds ofRaiffeisen Bank inUkraine, which is 12.7% per annum. Then the average return on a risk-free asset is  $r_f = 12,7/242 = 0.06\%$ . This value corresponds to the averageprofitability on bonds (12.7%) divided by the number of trading days in the year (there were 200 trading days in 2015-2017).

Sharp ratiocomprises Sharp ratio = 0.09. That is, according to the table we can conclude that the investing risk level in this investment is higher than the expected level profitability. Beta ratio – shows the sensitivity of a stock’s return on the market’s profitability (market index). This ratio is used both individually and in the Capital Assets Price Model (CAPM). The beta ratio reflects the systematic investment risk.The formula for calculating the beta ratio is following [9]:

$$\beta = \frac{\text{cov}(r_p, r_m)}{\sigma_m^2}, \quad (3)$$

where:  $\beta$  –Beta ratio

$r_p$  –average share profitability

$r_m$  - average market profitability

$\sigma_m^2$  – of market profitability dispersion

$\text{cov}(r_p, r_m)$  –covariance between share profitabilityand market profitability.

For the market profitability  $r_m$  one takes the stock index profitability.Tab. 3 shows the investment analysis in the stock market by  $\beta$  ratio. The higher the indicator value, the higher the possible profitability, but at the same time the risk is higher.The coefficient sign reflects the direction of change in the investment profitability. Positive value  $\beta$  indicates that changes in market profitability and investment move in the same direction, and negative – in the opposite direction.

According to this data  $r_m = 0,13\%$ .  $\sigma_m^2 = 7.84$ , a  $\text{cov}(r_p, r_m) = 0.071$ . The beta ratio for UTLM is  $\beta = 0.009$ , which indicates the low level of market risk for this investment. Investor strategy is conservative.

Table 3. Investmentefficiency assessmentby Ratio  $\beta$

Ratio value	Share risk level	Investor strategy
$\beta > 1$ $\beta < -1$	High	Agressive
$\beta = 1$ $\beta = -1$	Moderate	Passive
$-1 < \beta < 1$	Low	Conservative

Source: own elaboration

Treynor ratio shows the relation of exceeding investmentprofitabilityover its systematic risk.To

assess systematic risk.the market risk value is used.which is calculated as the beta ratio. The beta

ratio reflects the sensitivity of changes in investment profitability and market profitability (market index). The Trainor metric is used by many investment companies to rank the financial product management quality. The calculation formula is following [9].

$$\text{Treynor ratio} = \frac{r_p - r_f}{\beta_p}, \quad (4)$$

where:  $r_p$  – average share profitability;

$r_f$  – average risk-free asset return;  
 $\beta_p$  – stock market risk, calculated by the formula (3).

This indicator reflects the relationship between the share profitability excess and its market risk. The higher this indicator value, the more effective the investment (tab.4).

Table 4. Investment efficiency assessment by Treynor ratio

Ratio value	Efficiency assessment
Treynor ratio > 0	The higher this indicator value, the more effective the investment
Treynor ratio < 0	If $r_p < r_f$ , a $\beta_p > 0$ , it means that investment is not advisable. If $r_p > r_f$ , a $\beta_p < 0$ , it means that investment is efficient.

Source: own elaboration

The Treynor ratio comprises 0.13, that indicates that the investment market risk can be considered acceptable, i.e. investing in UTLM shares may seem effective.

Alpha Jensen and Modigliani ratios are used to evaluate the investment portfolios efficiency.

### Abstract

The investment efficiency assessment problem in stock market instruments is rather complicated, existing methodological approaches do not adequately take into account the economic globalization realities. Therefore, research in this field is currently being continued.

The ratios efficiency calculation allows to allocate the most effective management strategies in the stock market, or to revise and modify existing ones, as well as to minimize the investing risks in financial instruments. PJSC "Ukrtelecom" operates with securities on the Ukrainian stock market (UX), which is regulated by the securities management group. The company is an UTLM shares issuer. Therefore, the UTLM investment efficiency evaluation is a very important task for a company.

The article is devoted to the assessment of investment efficiency in the UTLM "UKRTELECOM". The statistical data of the balance sheet and the prices of UTLM shares for the period 2015-2017 are used. The article's analysis of the balance sheet was carried out on the basis of which the company's investment attractiveness was estimated. The company's share dynamics capital does not show stable growth; in this case, the investment risks in its shares are greatly increasing. But the company has a gradually increasing assets amount, so one can assume that it has a prospect of development.

An analysis of the company's stock exchange activity has also been carried out. The company's activity in Ukraine's stock market in recent years is characterized by the positive dynamics of the EBITDA multiplier. This indicates that the share price is slowly rising, so there is a demand for Ukrtelecom securities on the UX market.

Calculated and analyzed in terms of profitability and risk, the following efficiency ratios investment in UTLM shares are: shares profitability and volatility, Sharp, Beta and Treynor ratios. It is shown that at this time interval the investment risks are less than the shares yield. It was also found that there is a volatility clustering of shares profitability, indicating the possibility of dramatic upturns.

That is, it can be stated that efficiency cannot be calculated accurately, since it depends on the unknown shares sale rate in future. At the same time, it makes sense to have a comprehensive analysis because it gives the opportunity to look at the same situation from different positions and choose the most appropriate action course.

### Список літератури:

1. Уильям Ф. Шарп. Гордон Дж. Александер. Джеффри В. Бэйли. Инвестиции. – ИНФРА-М. 2007.
2. Markowitz H. (1952). Portfolio Selection. in: The Journal of Finance. Vol. 7. No. 1. 77-91.
3. Samuelson P.A. Mathematics of speculative price // Mathematical topics in economic theory and computation. Ed. By R.H. Day and S.M. Robinson. SIAM. Philadelphia. 1972. pp. 1-42.
4. Fama. E. Multifactor Portfolio Efficiency and Multifactor Asset Pricing / E. Fama // J. Finance. Quantitative Anal. 1996. Vol. 31. Jfe 4.



5. Хобта В.М., Попова О.Ю., Мешков А.В. // Активізація і підвищення інвестиційних процесів на підприємствах. Монографія // НАН України. Інститут економіки промисловості. МОН України. ДонНТУ. Донецьк. – 2005. – 343 с.
6. Ястремська О.М. Інвестиційна діяльність промислових підприємств: методологічні та методичні засади / Ястремська О.М. – 2-ге видання. – Х.: ВД «ІНЖЕК». 2010. – 488 с.
7. Гриньова В.М. Проблеми розвитку інвестиційної діяльності / В.М. Гриньова, В.О. Коюда, Т.І. Лепейко, О.П. Коюда. –Харків: ВД «ІНЖЕК». 2002. – 464 с.
8. Анализ бухгалтерского баланса // Азбука трейдера// Интернет-журнал для трейдеров и инвесторов [*Электронный ресурс*]. – Режим доступа: <https://www.azbukatrejdera.ru/analiz-buhgalterskogo-balansa.html#comment-3969>.
9. Андриенко В.М., Вайпан М.В. Оцінка ефективності інвестицій на фондовому ринку. Економічна кібернетика: теорія, практика та напрямки розвитку: матеріали науково-практичної конференції (Одеса. 28-29 листопада 2018 р.) – Одеса: ОНПУ. 2018. – С.12-14.
10. Жданов І.Ю. Оценка эффективности инвестиций, инвестиционного портфеля, акций на примере в Excel [*Электронный ресурс*]. – Режим доступа: <http://finzz.ru/ocenka-effektivnosti-investicij-analiz-akcij-investicionnogo-portfelya-na-primere-v-excel.html>.

## References:

1. Sharp, William., Aleksander Gordon Dzh., Bejli Dzheffri V. (2007). Investments. Moscow: INFRA [in Russian].
2. Markowitz, H. (1952). Portfolio Selection. The Journal of Finance, 7, 1, 77-91 [in English].
3. Samuelson, P.A., Day, R.H., Robinson, S.M. (1972). Mathematics of speculative price. Mathematical topics in economic theory and computation. SIAM Philadelphia, 1-42 [in English].
4. Fama, E. (1996). Multifactor Portfolio Efficiency and Multifactor Asset Pricing. Finance. Quantitative Anal. Vol. 31. Jfe 4 [in English].
5. Hobta, V.M., Popova, O.Yu., Myeshkov, A.V. (2005) Activation and increase of investment processes at enterprises. Doneck: NAN Ukrayini. Institut ekonomiki promislovosti. MON Ukrayini [in Ukrainian].
6. Yastremska, O.M. (2010). Investment activity of industrial enterprises: methodological and methodical principles. Harkiv: VD "INZhEK" [in Ukrainian].
7. Grinova, V.M., Koyuda, V.O., Lepejko, T.I., & Koyuda, O.P. (2002). Problems of investment activity development. Harkiv: VD "INZhEK" [in Ukrainian].
8. Analysis of the balance sheet. Azbuka trejdera. Internet-zhurnal dlya trejderov i investorov. Retrieved from: <https://www.azbukatrejdera.ru/analiz-buhgalterskogo-balansa.html#comment-3969> [in Russian].
9. Andrienko, V.M. & Vajpan, M.V. (2018). Estimation of the efficiency of investments in the stock market. Ekonomichna kibernetika: teoriya, praktika ta napryamki rozvitku: materialy naukovopraktichnoyi konferenciy. ONPU, 12-14 [in Russian].
10. Zhdanov, I.Yu. (2017). Evaluation of the effectiveness of investment. Investment portfolio. Shares for example in Excel. Finansovo-investitsionnyy blog Zhdanova Vasiliya i Zhdanova Ivana. Retrieved from: <http://finzz.ru/ocenka-effektivnosti-investicij-analiz-akcij-investicionnogo-portfelya-na-primere-v-excel.html> (18 July 2019) [in Russian].

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