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<https://doi.org/10.61796/jaide.v1i9.899>**MODERN METHODS OF ESTIMATION CAPITAL VALUE****Khudoykulov Khurshid Khurramovich**
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Abstract: The article indicates the scientific and theoretical aspects of using the method of multiplier coefficients in estimating capital value, focusing on using the EV / S and EV / EBITDA methods of evaluating capital value used in emerging market countries. In particular, based on data from Qizilqumsement, Kokand Mechanical Plant, Kvars, Uzmetkombinat from 2015 to 2019, the company's capital value is estimated. In addition, the existing problems in using EV / S and EV / EBITDA methods estimate and identify the value of capital of the joint-stock company. Then, scientific proposals and practical recommendations were developed by the author

Keywords: joint-stock company, cost of capital, multiplier ratio, capitalization, default spread risk, premium for country risk, terminal value of capital

This is an open-access article under the [CC-BY 4.0](https://creativecommons.org/licenses/by/4.0/) license**Introduction**

that has been taking place in the world in recent years, significant changes have been observed in the investment flows of large companies, and in turn, joint-stock companies are showing their impact on the stability of the capital value in various directions. As a result, in the current conditions, "companies are required to introduce modern methods of capital value assessment, financial asset assessment model and determine the weighted average value of capital and its reasonable composition" [1]. Making effective investment decisions by the company's financial managers, accurate assessment of the company's investment potential by various investors, and successful implementation of investment projects depend on the correct assessment of capital and business values, first of all, the company's capital value. In particular, "in 2021, the expected return on equity of companies in the USA is 4.34 percent, in Europe it is 4.56 percent, in Japan it is 4.25 percent, in China it is 4.69 percent, and in India it is 6.23 percent" [2]. This, in turn, shows the need to use the optimal method of assessing the value of the company's capital in determining the business value of companies in these countries, the implementation of investment projects and the levels of investment potential.

In large companies of the world, scientific research works are being carried out aimed at improving the scientific and methodological basis of capital cost estimation in making investment decisions on large projects. Including the introduction of modern methods of assessing the capital value of joint-stock companies, correctly determining the leverage value of capital based on systematic and unsystematic risks affecting capital, calculating the weighted average value of capital taking into account private and debt capital, determining the terminal value of capital by forecasting discounted cash flows, Calculating the debt capital of the company based on taking into account country risk premium and default spread risk, determining the expected return on capital taking into account the level of risk-free assets and the equity risk premium are the main directions.

Literature analysis

Today, most of the world's economists and financial managers use several modern methods to estimate the capital value of large joint-stock companies. This, in turn, indicates that large joint-stock companies have different approaches to assessing the value of their capital. In developed countries, there are three different generalized approaches to the valuation of the capital of joint stock companies. In particular, income, comparative value and cost methods are widely used. According to Damodaran, one of the foreign economists, it is appropriate to use the internal value, comparative value, and cash flow methods to evaluate the capital value of joint-stock companies. The use of these methods allows to estimate the real value of the capital of the joint-stock company [3]. Foreign economist John Burr Williams, in his research, showed the determination of the capital value of joint stock companies through the discounted dividend and discounted cash flow models in the assessment of the capital of joint stock companies. According to him, it was stated that the most appropriate way to evaluate the capital value of a joint-stock company is the amount of dividends paid and the percentage of dividends [4]. In our opinion, joint-stock companies in developed countries today pay a very low percentage of dividends. In addition, the dividend yield of the world's largest joint-stock companies grows by almost three percent per year. It can be seen that the evaluation of the capital value of a joint-stock company using the discounted dividend model shows that the shares of these joint-stock companies increase in market value for simple reasons. Today, the discounted dividend model (DDM) is used to determine the market value of the preferred shares of a joint-stock company. The expression of this model, which incorporates the element of general variables, is reflected in the following formula:
$$V = \sum_{t=1}^n \frac{[CF]_t}{[(1+i)]^t} + \frac{[CF]_{(t+1)}}{(i-g) \times 1} \frac{1}{[(1+i)]^n}$$
; where the present value of future earnings payable by the company V is determined by variables such as the discount rate i , dividend cash flows $[CF]_t$, and the rate of growth of earnings in the period following the forecast g . Damodaran, a foreign economist who conducts research on corporate finance, stated that it is appropriate to use the free cash flow model when evaluating the capital value of a joint-stock company. According to him, when using the model of free cash flows, it is necessary to take into account the cash flows of the joint-stock company and the cash flows in its own funds [5]. Today, in world practice, the use of the method of relative value estimation in the assessment of the capital of joint-stock companies is a widely used method. In particular, researchers use this method to determine the market value of joint stock company shares and forecast them. In particular, modern scientific researchers in the world are mainly devoted to the evaluation of multiplier coefficients in the method of relative values estimation. These, in turn, are price earnings ratio, price to book value ratio, price to sales ratio, and discounted cash flow ratios (DCF) is widely used.

In particular, in the studies of foreign economists Botsman and Baskin, industrial enterprises were analyzed by the coefficient of the ratio of market price to net profit P/E (price earnings ratio). According to the conclusion of these researchers, the growth of their income should be taken into account when assessing the capital value of industrial enterprises [6]. S. Kaplan and D. Rubaklar conducted studies on the method of discounted cash flows in the assessment of the capital of joint-stock companies and the effect of the multiplier coefficients of earnings before depreciation, interest and tax in the conditions of a high share of debt funds of these joint-stock companies. According to their conclusion, they pointed out that the method of valuation with discounted cash flows in the estimation of capital value, taking into account the figure of profit before deduction of taxes, interest and depreciation [7]. Foreign economist S. Penman calculated the multiplier coefficients in his research, in particular, the ratio of the capital value to the market price to the net profit and the market value of the capital of joint stock companies through the coefficients of the ratio of the market price to the book value of the stock, and the market and book value of the stock through the combination of the weighted weight of these coefficients which is in line with the implementation of the forecast [8]. In the study of foreign economists, Hotchkiss and Muradians used the relative value method to determine the level of bankruptcy of joint-stock companies using the multiplier coefficients. According to them, the enterprise value EV (Enterprise Value), calculated as the coefficient of discounted cash flows, determined the level of bankruptcy of the enterprise through the coefficients

of the ratio of enterprise value EV (Enterprise Value) to the assets of the enterprise. In particular, according to research conclusions, discount cash flow coefficients determine the probability of bankruptcy of a joint-stock company by 40-70 percent [9]. Therefore, the results of the analysis obtained by these scientists using the coefficient of discounted cash flows lead to a scientific conclusion that a joint-stock company can determine the state of bankruptcy not 100 percent, but from 40 percent to 70 percent. In their scientific research, foreign economists Liu, Nissim and Thomas used alternative methods of determining the multiplier coefficients that represent the market's main efficiency in determining the capital value of joint-stock companies and the market price of shares. According to them, it is based on the need to use EV (Enterprise Value) coefficients in the assessment of capital. In turn, the use of enterprise value EV (Enterprise Value) coefficients is more accurate than P/E (price earnings ratio) and P/B (price to book value ratio) coefficients. They emphasize that it gives an opportunity [10]. They conducted research on the impact of the P/E ratio (price earnings ratio) on the investment opportunities in the stock market of the developed G-7 countries.

According to S. E. Elmirzaev, one of the local economists conducting scientific research on the development of modern corporate finance, it is appropriate to use several stock valuation models used in the assessment of the capital of joint-stock companies and to take into account their average. In addition, the P/E ratio, which is widely used in equity valuation, expresses the essence of the ratio as follows. In particular, the P/E ratio initially explains the value of the company's earnings per share in the future period [11].

Local economists B. Toshmurodova and S. Elmirzaev in their research touched on several approaches to capital cost accounting that are widely used in practice. This, in turn, explains the different dividend discount models DDM (Dividend discount model), capital asset pricing model CAPM (Capital asset pricing model), Modigliani-Miller model (Modigliani–Miller theorem) and capital valuation with multiplier coefficients [12]. In addition, local economist R.Kh. Karlibaeva, in her research on ways to effectively organize the financial management system in joint-stock companies, noted that in the assessment of capital structure, it is represented by the ratio of private capital and debt capital. In particular, the minimization of the cost of debt capital is explained by the increase in the profitability of private capital [13].

In our opinion, the dividend payout ratio, dividend yield rate, enterprise value EV (Enterprise Value) before deduction of taxes, interest and depreciation EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortization) coefficient, Gordon model, PEG (price/earnings to growth) coefficient, P/E (price earnings ratio) and P/B (price to book value ratio) coefficients are appropriate to use. Also, these coefficients are widely used today to determine the market price of shares in the primary public placement of shares of these joint-stock companies in order to reduce the state share in large joint-stock companies in our country.

Methods

When assessing the capital value of joint-stock companies, the EV/S (Enterprise value/Sales) ratio of their capital value to revenue from product sales should be used. The multiplier factor EV/S is found as follows.

$$\frac{EV}{S} = \frac{\text{The value of a joint-stock company}}{\text{income from product sales}}(1)$$

Here; The value of the joint-stock company (Enterprise value) = market capitalization-money + Short-term loans and debts + Long-term loans and debts.

Also, when determining the value of the capital of joint-stock companies, the ratio of the value of the share capital to the profit before taxes, interest, and amortization costs EV/EBITDA (Enterprise value/Earnings before Interest, Taxes, Depreciation and Amortization) can be used. The EV/EBITDA multiplier is found as follows.

$$\frac{EV}{EBITDA} = \frac{\text{the value of the joint-stock company}}{\text{profit before taxes and interest}}(2)$$

Here: EV- the value of the joint-stock company; EBITDA-profit before taxes and interest; EBITDA= Gross profit – selling, general and administrative expenses (SG&A) – other operating expenses + Other operating profit + depreciation expenses

Resut and Discussion

EV/S multiplier coefficients of "Qizilqumsemet", "Kokon Mechanical Plant", "Kvars" and "Ozmetkombinat" JSCs in the research work are presented in the following table (Table 1)

Table 1
Analysis of EV/S multiplier coefficients of joint stock companies

No	Indicators	2015	2016	2017	2018	2019
"Qizilqumsemet" JSC						
1	Net income from product sales (billion in soums)	758	1013	1121	1660	1683
2	Market capitalization (billion) in soums)	703	703	604	669	718
3	Funds (billion in soums)	22	54	110	19	61
4	Short-term loans and debts (billion in soums)	80.3	55.0	10.0	0.0	0.0
5	Long-term loans and debts (billion in soums)	10	54	158	64	0
6	Equity Value (EV) (billion in soums)	771	758	663	714	657
7	EV/S ratio i	1.02	0.75	0.59	0.43	0.39
"Kokon Mechanical Plant" JSC						
1	Net income from product sales (billion in soums)	52	59	84	80	32
2	Market capitalization (billion) in soums)	20.3	20.3	22.4	31.3	25.0
3	Funds (billion in soums)	0.03	0.00	0.29	0.64	0.03
4	Short-term loans and debts (billion in soums)	0.03	1.38	0.11	0.00	0.00
5	Long-term loans and debts (billion in soums)	0.60	0.36	0.18	0.01	0.00
6	Equity Value (EV) (billion in soums)	20	22	22	31	25
7	EV/S ratio	0.4	0.4	0.3	0.4	0.8
"Kvars" JSC						
1	Net income from product sales (billion in soums)	162	235	303	300	247
2	Market capitalization (billion) in soums)	78	78	78	130	315
3	Funds (billion in soums)	8	9	8	12	8
4	Short-term loans and debts (billion in soums)	3	6	0	0	0
5	Long-term loans and debts (billion in soums)	0	1	20	0	88
6	Equity Value (EV) (billion in soums)	74	77	91	119	396
7	EV/S ratio	0.5	0.3	0.3	0.4	1.6
"Uzmetkombinat" JSC						
1	Net income from product sales (in billion soums)	970	1140	1800	4679	5261
2	Market capitalization (in billion soums)	217	217	217	650	1300
3	Funds (in billion soums)	21	53	195	146	40
4	Short-term loans and debts (in billion soums)	45	37	30	45	176

5	Long-term loans and debts (in billion soums)	53	68	408	760	847
6	Equity Company Value (EV) (in billion soums)	294	269	459	1309	2282
7	EV/S ratio	0.3	0.2	0.3	0.3	0.4

The analysis of the data in Table 1 shows that the value of the capital of "Qizilqumsemet" JSC in 2015 was 771 billion soums, in 2019 this indicator decreased by 15%. The EV/S ratio was 1.02 in 2015 and 0.39 in 2019. If the EV/S coefficient is less than one, the value of the joint-stock company is undervalued, and it indicates that the potential of the company is expected to grow. If the multiplier factor EV/S is $1 < EV/S < 3$, it indicates that the value of the joint stock company is fairly estimated. Our analysis shows that the value of Kizilkumtsement JSC was overestimated in 2015 and underestimated in 2019. In 2019, the value of "Kokon Mechanics Plant" JSC increased by only 25% compared to 2015, in particular by 20 billion soums. Also, the EV/S ratio was 0.4 in 2015, and reached 0.8 in 2019. One of the main reasons for this is the increase in the market value of the company's capital shares. In 2015, the value of Kvars JSC was 74 billion soums, and in 2019, it shows that it has increased by almost 5.3 times. In particular, it can be seen that the EV/S ratio was 1.6 in 2019 and 0.5 in 2015. This means that the value of the joint-stock company shows the correct assessment in relation to its product income, and it indicates that the value of JSC "Kvars" is correctly assessed in 2019. The value of Ozmetkombinat JSC is 294 billion soums in 2019. However, the EV/S ratio increased from 0.3 to 0.4. Therefore, the value of "Uzmetkombinat" JSC is estimated at a low value. In conclusion, it can be said that the increase in income from the sale of products of a joint-stock company does not affect the capital value of the company. However, the increase in income from the sale of products should lead to an increase in the value of the joint-stock company.

In our study, the analysis of the EV/EBITDA multiplier coefficient of JSCs "Qizilqumsemet", "Kokon Mechanical Plant", "Kvars" and "Ozmetkombinat" is presented in the table below (Table 2).

Table 2
Analysis of EV/EBITDA multiplier ratios of joint stock companies

No	Indicators	2015	2016	2017	2018	2019
"Qizilqumsemet" JSC						
1	Gross profit (in billion soums)	303	446	479	872	659
2	Selling, general and administrative (SG&A) expenses	28	28	33	41	38
3	Other operating expenses	132	113	116	168	290
4	Other operating profit	7.9	7.9	7.5	11.7	18.3
	Depreciation costs	51.8	102.7	62.1	331.1	159.4
5	Earnings before interest, taxes and depreciation of fixed assets (EBITDA)	203	415	400	1006	509
6	shareholder value (EV)	771	758	663	714	657
7	EV/EBITDA ratio i	3.80	1.83	1.66	0.71	1.29
"Kokon Mechanical Plant" JSC						
1	Gross profit (in billion soums)	14.0	13.1	16.3	13.9	3.4
2	Selling, general and administrative (SG&A) expenses	2.2	2.2	3.2	3.4	2.8
3	Other operating expenses	3.5	4.4	6.5	7.6	2.8
4	Other operating profit	2.8	3.0	3.3	3.9	1.7
	Depreciation costs	3.3	5.1	3.9	7.7	1.3
5	Earnings before interest, taxes and depreciation of fixed assets (EBITDA)	14.4	14.6	13.9	14.4	0.8
6	shareholder value (EV)	20	15	14	14	25

7	EV/EBITDA ratio i	1.4	1.1	1.0	1.0	29.7
"Kvars" JSC						
1	Gross profit (in billion soums)	50	101	163	131	82
2	Selling, general and administrative (SG&A) expenses	28	30	48	58	77
4	Other operating profit	1	3	3	3	4
	Depreciation costs	9	9	9	11	10
5	Earnings before interest, taxes and depreciation of fixed assets (EBITDA)	32	83	126	87	20
6	shareholder value (EV)	74	77	91	119	396
7	EV/EBITDA ratio i	2.3	0.9	0.7	1.4	20.2
" Uzmetkombinat " JSC						
1	Gross profit (in billion soums)	266	354	583	1148	1132
2	Selling, general and administrative (SG&A) expenses	87	97	112	141	218
3	Other operating expenses	140	172	220	426	379
4	Other operating profit	9	16	30	39	42
	Depreciation costs	0.1	0.1	0.1	0.3	0.2
5	Earnings before interest, taxes and depreciation of fixed assets (EBITDA)	49	101	281	620	578
6	shareholder value (EV)	294	269	459	1309	2282
7	EV/EBITDA ratio i	6.0	2.7	1.6	2.1	4.0

The data in Table 2 shows that the EV/EBITDA multiplier ratio of Kizilkumtsement JSC was 3.80 in 2015, and 1.29 in 2019. If this multiplier factor is $0 < \text{EV/EBITDA} < 3$, the equity value of the joint stock company is undervalued by the stock market. Despite the fact that the profit of the joint-stock company is in the trend of growth over the years, it indicates that the value of the capital of the company is not fairly evaluated. If the multiplier coefficient is $3 < \text{EV/EBITDA} < 7$, it indicates that the value of the joint-stock company is fairly valued. If the multiplier coefficient $\text{EV/EBITDA} > 7$, the value of the capital of this company is overestimated by the stock market. In 2019, the EV/EBITDA multiplier ratio of "Kokon Mechanics Plant" JSC increased by almost 22 times compared to 2015, in particular, from 1.4 in 2015 to 29.7 in 2019, which means that the capital value of Kokon Mechanics Plant JSC is high in 2019 shows that it is evaluated. EV/EBITDA multiplier coefficient of Kvars JSC was 2.3 in 2015, and 20.2 in 2019. It can be seen that the value of JSC "Kvars" capital is overestimated in the market. However, it shows that the gross profit of the joint-stock company is not growing proportionally with the value of the company's capital. The EV/EBITDA multiplier coefficient of Ozmetkombinat JSC was 6.0 in 2015 and 4.0 in 2019. The capital value of "Uzmetkombinat" JSC is actually underestimated by the stock market. As a conclusion, it should be noted that in 2015 JSC "Kvars" has high investment attractiveness. The reason is that the EV/EBITDA multiplier coefficient is the smallest indicator of Kvars JSC. However, in 2019, JSC "Uzmetkombinat" has a high investment attractiveness, as the multiplier coefficient EV/EBITDA is the smallest.

Conclusion

Based on the results of the above research, the spread of the coronavirus infection (SOVID-19) will have an impact on the country's economy, capital market and capital value of companies. In particular, due to irregular trading in world capital markets, the capital value of companies has increased. Our conclusions and suggestions for mitigating the effects of these factors are as follows.

1. Important market indicators should be taken into account when evaluating the capital of joint-stock companies in our country and in the criteria for evaluating the efficiency of joint-stock companies. Also, when evaluating the performance of joint-stock companies through the multiplier coefficient, it is possible to determine the market price and balance sheet value of securities of joint-stock companies.

2. As a result of reducing the state's share in joint-stock companies of our republic, it is necessary to use the relative value method in determining the market value of the shares of the joint-stock company of the placement of primary and secondary public shares. This, in turn, provides forecasting of the capital value of joint-stock companies and the market price of their shares.
3. It is necessary to develop a sequence of evaluating the criteria for evaluating the activities of joint-stock companies through important market indicators. It is also necessary to make changes to the Decision on the introduction of criteria for evaluating the efficiency of economic entities. In turn, the stock market provides an opportunity to assess the value of the capital of a joint-stock company with important performance indicators.
4. When determining the capital value of a joint-stock company, it is appropriate to use the evaluation indicators of developed countries. In particular, the assessment of the capital value, taking into account the value of the assets of joint-stock companies, the value of private capital, provides an opportunity to determine the real market value of the capital value.
5. When determining the return on capital of a joint-stock company, the coefficient of return on invested capital (ROIC), which is widely used in developed countries, should be used. This ratio is used to determine the effectiveness of the capital investment of the joint-stock company.
6. Capital value assessment of JSCs "Qizilqumsemet", "Uzmetkombinat", "Koqon Mechanical Plant" and "Kvarts" was carried out using the method of discounted cash flows. As a result, the growth potential of the capital of each joint-stock company between the target price of the shares and the market price is determined. Also, in the assessment of the value of the capital of these companies, the evaluation was carried out using the five-year free cash flow forecast method. In particular, the business plan indicators of joint-stock companies, weighted average value of capital and financial asset valuation model were used during the evaluation process. At the same time, using the weighted average value of capital in determining the current terminal value and the discount rate of the capital asset valuation model in determining the value of private capital, the valuation of private capital and capital values was carried out.

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