

PROGRESSIVE METHODS OF ASSESSING THE CAPITAL VALUE OF JOINT STOCK COMPANIES IN DEVELOPED COUNTRIES

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Article Info	ABSTRACT
<p>Article history: Received June 05, 2024 Revised June 25, 2024 Accepted July 05, 2024</p> <p>Keywords: average weighted average cost of capital , cost of debt capital, cost of equity capital, expected return, default risk, capital structure</p>	<p>The article examines and analyzes the scientific and practical aspects of progressive methods for estimating the cost of capital of joint-stock companies in developed countries. It also describes methods commonly used in world practice, including methods of cost of equity and weighted average cost of capital. In addition to this , the methods used to analyze the cost of capital of joint-stock companies in Europe and the United States. In particular, the progressive capital valuation was used by the four largest accounting and consulting firms in the world.</p> <p style="text-align: right;">This is an open-access article under the CC-BY 4.0 license.</p> 

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INTRODUCTION

When determining the business value of companies in developed countries of the world, it is explained by determining its capital value. In particular, in the case of 2018, this indicator shows that the expected return on capital of companies in the USA is 7.0 percent, in Europe it is 7.16 percent, in Japan it is 3.2 percent, in China it is 9.14 percent, and in India it is 9.18 percent . This, in turn, shows the business value of the companies in these countries, the level of implementation of investment projects, and the investment potential.

Currently, in the system of assessing the capital value of the joint-stock company in our country, the unified assessment standard has not been introduced, national assessment standards are not ensured to be proportional to the international assessment standards, income and comparative methods are not used to determine the real market assessment of the capital value.

Today, in world practice, progressive methods of capital value assessment are used to determine the investment potential of large joint-stock companies, business value, to determine the minimum level of expected income from investment projects, and to determine the country's level of riskiness. Joint-stock companies of developed countries

are widely used income and comparative methods in the assessment of capital. Unfortunately, in our country, the cost method is still used in the evaluation of the share capital. In particular, the evaluation system in our country is not aligned with the international evaluation standard. Capital asset valuation model (CAPM), weighted average cost of capital (WACC), weighted average return on assets (WARA), which are widely used methods in developed countries, cannot be used to determine the real market value of share capital.

In developed countries, using the calculated income method, which is a progressive method of assessing the capital value of joint-stock companies, it is used to determine the expected return on capital of the joint-stock company, discounted cash flows, free cash flows, debt capital value, and the capital budget of the joint-stock company, as well as to determine the capital structure. The use of these methods serves to determine the number of investment projects and joint-stock companies in the country that domestic and foreign investors are ready to invest capital in. In particular, these methods show the extent to which a country has developed credit rating and corporate governance practices.

Literature review

Today, one of the most important problems in corporate finance is the assessment of the capital value of joint-stock companies. In developed countries, the capital budget of joint-stock companies is the main criterion and financial managers use the method of capital evaluation to evaluate their activity. For investors, this method determines the future discounted cash flows of the joint stock company's capital. In the practice of developed countries, the value of debt and private capital is taken into account when assessing the capital value of joint-stock companies. According to Rainer Bole's research, the most important element in evaluating a company's capital value is the debt capital ratio. In particular, the elements of debt capital are the most important component when creating a company's capital budget and assessing its value. According to him, the expected return on debt capital depends on the return on risk-free assets and the return on assets in the debt securities market [1]. Damodaran, a foreign economist, in his scientific research stated that the use of the weighted average value of capital, which is the most basic method for assessing the capital value of a joint-stock company, should be taken into account. In particular, this method serves to determine the expected income from the investment and the cost of financing the activities of the joint-stock company, as well as the minimum expected income from the investment project. In his opinion, he stated that the method of evaluating capital value is the most important tool in making investment, financial and dividend decisions in a joint-stock company [2].

Rajesh Kumar uses the weighted average cost of capital method in valuing the capital of a joint stock company and shows the possibility of valuing debt and private equity using this method. In his research, he emphasized the consideration of risk-free asset and risk premium indicators when valuing private equity. In particular, financial

analysts use the rate of return on bonds with different maturities during the capital appreciation period. On the other hand, for risk-free assets, they recommended using the rate of return of long-term treasury administrations. In their opinion, the determination of risk premium is the most important process in private equity valuation. In particular, the risk-reward of a stock is determined by subtracting the average return of the stock market index from the average return of the treasury bond. Investigated the method of assessing the value of private capital by determining the risk of shares of joint-stock companies, in particular, the market risk. In addition, the researcher focused in his scientific work on the aspects aimed at assessing the capital value of the joint-stock company using the weighted average value of capital method. On the other hand, he studied the capital of the enterprise into debt and private capital, and showed the method of evaluating the debt of the enterprise taking into account the balance sheet value when evaluating the value of debt capital [4].

Foreign economists Michela Arnaboldi, Giovanni Azzone and Marco Giorgino have discussed in their scientific work the possibility of carrying out the process of evaluating the capital value using the methods of weighted average cost of financial assets and capital. The use of the financial asset valuation method depends on the shareholders of the joint-stock company. However, the weighted average cost of capital method shows that the joint stock company depends on its shareholders and debtors. According to them, the debt capital value of the enterprise should be assessed taking into account the risk-free asset credit default spread. In joint-stock companies, their capital value is evaluated using the methods of debt and private capital and weighted average cost of capital. Many economists, in particular, Stefano Caselli, have emphasized this point: "The value of private and debt capital and the weighted average value of capital should be assessed in the evaluation of the company's capital value. These valuation methods also evaluate the company's prospects and calculate freely discounted cash flows. If the method of estimating the value of private capital calculates the discounted cash flows of the enterprise, taking into account the debt, the weighted average value method of the capital does not take into account the debt capital of the enterprise when determining the discounted cash flows. In the implementation of these methods, balance sheet data of joint-stock companies are used" [5].

According to the scientific research of economists Mark Bertonech and Rory Knight: "Estimating the capital value of joint-stock companies takes into account private and debt capital on the balance sheet of this company." According to them, debt capital is 40 percent and private capital is 60 percent of the capital of the joint-stock company. Researchers have shown in their scientific work that it is possible to evaluate the value of capital using the weighted average method [6]. In our opinion, the method of financial asset evaluation and weighted average cost of capital is widely used by financial managers in the rapidly developed countries to evaluate the capital value of the joint-stock company. The use of these methods makes it possible to determine the value of private and debt capital of joint-stock companies.

Goldman Sachs Group, a major investment bank, uses the financial asset valuation model to determine the private equity value of joint-stock companies. On the other hand, when assessing the value of private equity, the result is calculated by multiplying the risk of securities by the premium for market risk, adding the return on risk-free assets, and adding the resulting result to sovereign income. The method of estimating the value of private capital is reflected as follows.

Equity value=sovereign income+risk-free asset income+(stock risk*market risk premium) [7] .

by the world-famous Ernst & Young (EY) auditing and consulting company of Great Britain on the practice of capital cost evaluation of a joint-stock company in Switzerland, a financial asset model was used to determine the value of private capital, taking into account the size of the premium for risk. The process of evaluating the value of debt capital is carried out taking into account the corporate bond and credit spread. According to the results of the research, the capital value of joint stock companies of this country is 10.11 percent. This, in turn, indicates the expected return for the investor from the investment in joint-stock companies. And for the joint-stock company, the rate of return required for the implementation of the investment project is considered. In the assessment of the company's capital value, the stock company carried out taking into account the interest rate of government bonds issued in the national currency of Switzerland, the global market risk premium index, and the risk premium index of enterprises with small capitalization. He determined that the weighted average cost of capital is 8.5 percent. In this method, debt capital was assessed using credit spreads. "Ernst & Young" (EY) audit-consulting company's capital value assessment practice of a joint-stock company in Switzerland is reflected in the following equation Table 1 [8] .

Table 1
Capital value of joint stock companies in Switzerland
evaluation methods

Government bond yield (Swiss 10-year government bond yield)	a
Premium for global risk	b
According to practitioners' method: beta= unleveraged beta*(1+ debt/equity)	d
the size of the risk for the level of capitalization of the enterprise (data from Duff & Phelps, valuation manual)	e
Capital cost assessment (g)	$g = a + bxd + e$
Government bond yield (Swiss 10-year government bond yield)	h
Credit spread (credit rating indicator)	i
Cost of debt assessment (k)	$k=h + i$
The share of private capital in the capital structure	I
Share of debt capital in capital structure	m
corporate tax rate	n
Weighted average cost of capital	$g xI+kmx (1-n)$

Value Adviser Associates is a financial services company in Australia. This company is also using the methods of assessing the capital value of joint stock companies. In determining the capital value of a joint-stock company, it has been shown that it is necessary to take into account the risk-free asset ratio, the premium for market risk and the market risk of the company's shares, as well as the capital structure. The debt capital of a joint-stock company is increased by taking into account the risk-free asset stack and the premium for debt. In particular, the weighted average capital cost estimation method of a joint-stock company is expressed as follows in Table 2 [9] .

Table 2
Capital cost of a joint stock company in Australia
evaluation methods

Risk-free asset rate	R_f
Market risk premium	MRP
Beta (leveraged)	be
Cost of equity capital (Ke)	$Ke = R_f + MRP \times be$
Share of debt capital in capital structure	D/V
The share of private capital in the capital structure	E/V
Value of debt capital	K_d
The cost of equity capital	$That$
Weighted Average Cost of Capital (WACC)	$WACC = (E/V) \times K_d + D/V \times K_e$

" KPMG " audit-consulting company is also researching the practice of assessing the capital value of a joint-stock company. According to this company research, the valuation method is important in making investment and transactional decisions. In particular, the research shows that risk-free asset rate, market risk premium, country risk premium, and terminal value growth are the most important indicators in the evaluation of capital value. Researched the determination of the premium for risk through the method of valuation of financial assets [10] . "PwC" audit-consulting company conducted a research on capital value assessment of 200 joint-stock companies in New Zealand, in particular, it showed the need to use weighted average cost of capital and financial assets assessment methods in capital value assessment. In turn, the credit rating indicator is taken into account when assessing the cost of debt capital [11] . In the study of O.G. Blajevic and N.Kirilchuk, in the evaluation of the capital value of the joint-stock company, the capital evaluation cumulative, financial asset evaluation, weighted average cost of capital and arbitrage evaluation models were applied. According to their opinion, the method of financial asset valuation can be used only if the shares of the joint-stock company are always quoted in the stock market. The weighted average cost of capital method serves to evaluate the capital investment of a joint-stock company. In the method of cumulative assessment of capital, it is possible to always use it in the assessment of equity capital, because the market value of the assets of the joint-stock company is not calculated [12] .

Today, the Damodaran capital value estimation method is used in the capital value estimation of joint stock companies in developed countries. In our opinion, this method can evaluate the real value of the capital of the joint-stock company. This method is used in cost of capital assessment, especially taking into account country risk premium, inflation rate and credit rating. Due to the fact that the financial market is developed in developed countries, and the impact of macroeconomic indicators is high, macro and micro level indicators are taken into account when assessing the value of capital.

METHODS

The research uses the method of assessing the capital value of the joint-stock company of developed countries. An analysis of the method of financial asset valuation, market risk, risk premium and debt capital value indicators necessary for the capital value assessment of the joint-stock company was carried out. The following indicators were calculated and analyzed when assessing the capital value of the enterprise:

$$C_e = R_f + \beta * MRP \quad (1)$$

here,

C_e - capital cost;

R_f - risk-free asset rate of return;

β - systematic risk (correlation between the return of the market index and the return of the market value of the share)

MRP- premium for market risk (equal to the expected market return minus the rate of return on risk-free assets);

In the study, the method of evaluating the weighted average value of the capital of joint stock companies of developed countries, the method of evaluating the value of debt capital was calculated and analyzed:

$$WACC = c_e * E / (D + E) + c_d * (1 - t) * D / (D + E) \quad (2)$$

here,

c_e - capital cost;

E- market value of private capital;

D- market value of debt capital;

c_d - debt capital value (credit rating , bond profitability level) ;

t- corporate tax rate.

The joint-stock company of the developed countries of the world was selected as the object of research, and the capital value and the weighted average value of the capital of the joint-stock company were determined using the methods of grouping, comparative analysis, selection, and observational analysis based on its data. Data Damodaran official

website ([http:// pages.stern.nyu.edu/](http://pages.stern.nyu.edu/)) and annual reports of stock exchanges of developed countries were used

RESULT AND DISCUSSION

Today, several modified models of the method of assessing the capital value of a joint-stock company based on the characteristics of its capital are used in developed countries. Therefore, financial asset valuation (SAPM) and weighted average cost of capital (WACC) models, as one of the most popular models in developed countries, are widely used by financial managers and companies providing financial consulting services to evaluate the capital value of a joint-stock company. Also, in developed countries, the use of financial asset valuation method in determining the capital value of a joint-stock company allows the joint-stock company to determine the value of private capital, market risk of capital, premium for market risk, and expected return on capital. The weighted average cost of capital method serves to determine the cost of debt capital, capital structure, capital budgeting and discounted cash flows of a joint-stock company. Moreover, these methods are also effective in making decisions for corporate finance at the same time. Capital value estimation methods are widely used in practice for stock market risk assessment, portfolio management, and investment portfolio selection.

In our scientific research, we tried to carry out analyzes in accordance with the methodology of capital value assessment of joint stock company of developing countries. As part of our research, the countries of Europe, the USA and Japan were analyzed based on the financial asset valuation (SAPM) model in determining the capital value of a joint-stock company. The analysis of the state of capital value of 6052 joint-stock companies in European countries is reflected in the table below (Table 1).

Table 1

State of capital value of joint stock companies of European countries (2014-2019)
in percent

Years	Risk free assets income level	Risk for reward	Market risk (beta)	Shareholding society capital value
2014	2.17	6.88	1.18	10.29
2015	2.27	7.16	1.07	9.93
2016	2.45	6.81	1.04	9.53
2017	2.41	6.01	1.08	8.90
2018	2.68	7.11	1.06	10.22
2019	1.92	6.01	1.08	8.41

Based on our analysis, as can be seen from the data in Table 1, we can see that the capital value of the joint-stock company was 10.29 percent in 2014, and 8.41 percent in 2019. As can be seen from this, the capital value of the joint-stock company is in the trend of falling from year to year, but in 2018 it reached the highest level. This, in turn, indicates that the income necessary for the implementation of investment projects of joint-stock companies is decreasing over the years. Looking at risk-free assets, the rate of return on

government securities in 2014 was 2.17 percent, and in 2019 it decreased to 1.92 percent. However, the risk premium was 6.88 percent in 2014 and 6.01 percent in 2019. This means that the return on the stock market of joint stock companies in European countries is 5 times higher than the return on government securities.

The analysis of the state of capital value of joint stock companies of European countries through debt and private capital value determined in our research is shown in the following figure (Figure 1).

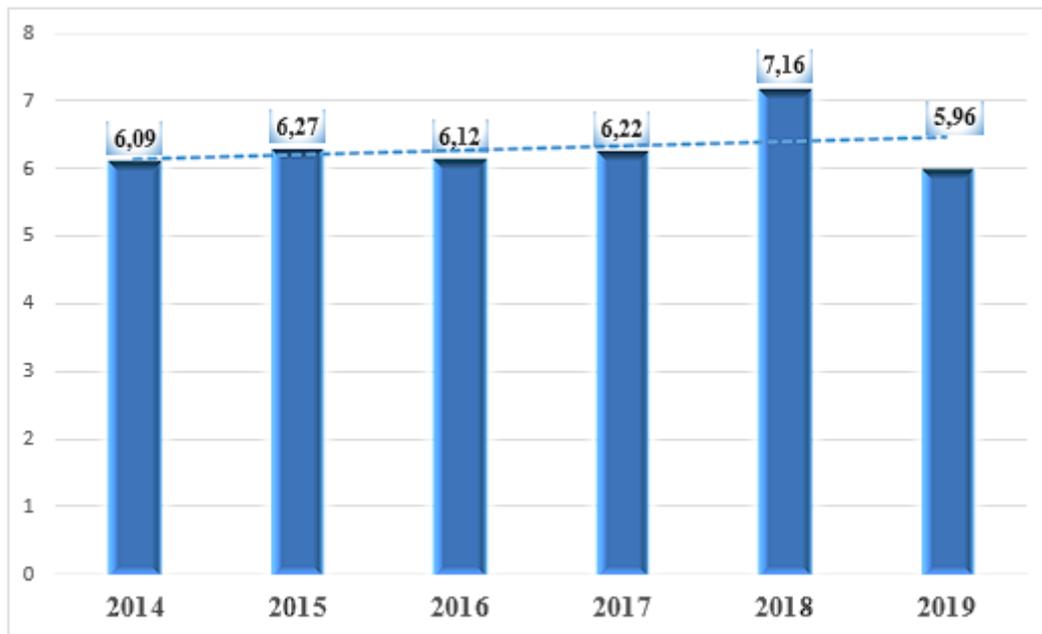


Figure 1. State of weighted average value of capital of joint stock companies of European countries, in percent (2014-2019)

According to the data of Figure 3, the weighted average value of the capital of joint stock companies of European countries was 6.09% in 2014, and the growth rate was 7.16% in 2018. However, by 2019, the cost of capital has been declining, showing a rate of 5.19 percent. It can be seen that the weighted average value of the capital of joint stock companies has decreased. The low average cost of capital indicates the low risk of the country, as well as the large number of projects and joint-stock companies in which foreign investors are ready to invest capital. In addition, the level of corporate management is developed, which indicates a significantly higher investment potential of the region. The increase in the average value of the capital of joint-stock companies in European countries was due to the increase in the profitability of private capital. Ensuring the profitability of private capital at a high rate of growth serves to determine the composition of the capital[13].

In our scientific research, we will carry out a step-by-step analysis of the indicators necessary to determine the capital value of 7,367 joint-stock companies in the

United States. The analysis of the capital value of joint stock companies in the USA is shown in the table below (Table 2).

Table 2
State of the capital cost of joint stock companies of the United States (2014-2019)
in percent

Years	Risk free assets income level	Risk for reward	Market risk (beta)	Private capital value
2014	2.17	5.75	1.06	8.27
2015	2.27	6.00	1.13	9.05
2016	2.45	5.69	1.00	8.14
2017	2.41	5.08	1.00	7.49
2018	2.68	5.96	1.12	9.36
2019	1.92	5.20	1.13	7.80

Analysis of the data in Table 2 shows that the expected return on capital of joint-stock companies in the USA was 8.27% in 2014, and 7.80% in 2019. The main reason for this is that the level of risk in the financial market in the country is high, especially in 2019, the level of market risk was 1.13 points. In addition, the decrease in the expected income from capital was caused by the premium for risk expected from the financial market, in particular, the decrease in the level of profitability of shares of joint-stock companies. In our opinion, the high expected return from the capital of joint-stock companies indicates the country's high level of riskiness, significantly decreasing investment potential, and decreasing sovereign credit rating. Experts of the great future in Uzbekistan have analyzed the situation of the capital value of the joint stock company in the world and noted that the expected return on the capital of the joint stock company in Uzbekistan is 25 percent. In their opinion, high expected return on capital indicates high level of riskiness of the country, few projects in which foreign investors are ready to invest capital [14].

After determining the capital value of joint-stock companies in the United States, it is necessary to analyze the capital structure of this joint-stock company. Because the high rate of growth of debt capital in the capital structure of a joint-stock company leads to an increase in the cost of capitalization. In a joint-stock company, the growth of private capital at a high rate serves to increase the return on capital. In turn, it shows the stability of the financial situation and sufficient sources of own funds for the implementation of the investment project.

The analysis of the weighted average value of the capital of joint-stock companies in the USA is reflected in the figure below (Figure 2).

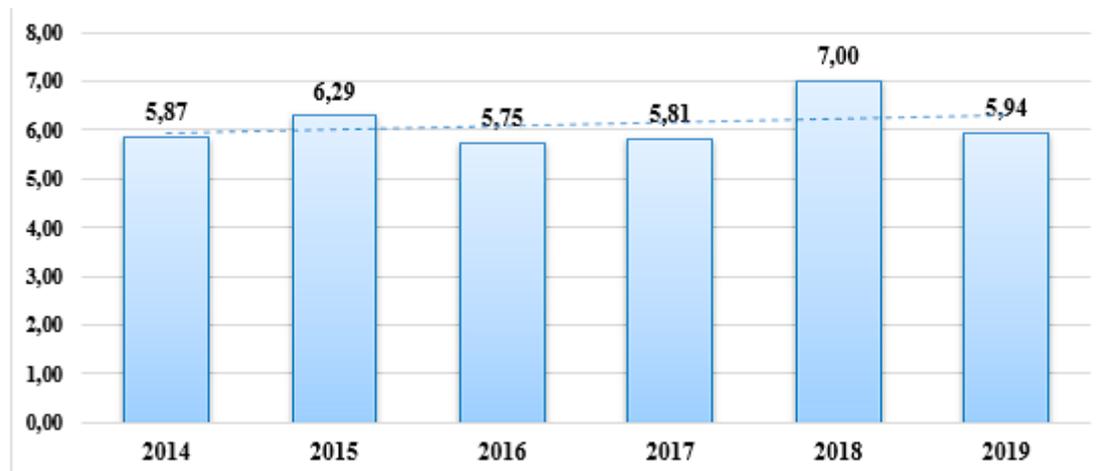


Figure 2. Capital of joint-stock companies of the USA
State of weighted average value, in percent (2014-2019)

According to the data of Figure 5, the weighted average value of the capital of joint stock companies in the USA was 5.87% in 2014, and the rate of decrease in 2019 was 5.94%. However, by 2018, the cost of capital had a high growth rate of 7.00 percent. It can be seen that the weighted average value of capital of joint-stock companies has decreased. In conclusion, it can be said that the minimum average cost of capital of a joint-stock company in the United States is almost 6 percent. In addition, joint-stock companies show that the discounted cash flow is almost 6 percent

CONCLUSION

From the analysis, it can be concluded that joint stock companies of developed countries are using progressive methods of capital value assessment. The main reason for this is the development of the financial market in developed countries, as well as the widespread use of financial instruments in the formation of capital of joint-stock companies. Today, in our country, there are the following problems in assessing the capital value of joint-stock companies:

First, in developed countries, the income method is widely used in the evaluation of the capital value of the joint-stock company. However, in our country, the cost method is still used to evaluate the capital value of a joint-stock company

Secondly, in our country, there is a practice of assessing the value of the capital of a joint-stock company, but there is a single assessment standard like developed countries. In particular, the evaluation standards in our country are not aligned with the international evaluation standard.

To eliminate the above problems, it is advisable to implement the following measures:

First of all, it is necessary to adjust the valuation standards of developed countries in the assessment of capital value of joint stock companies. This, in turn, allows joint-

stock companies in our country to use the income method in the assessment of capital value. In addition, it serves to evaluate the business environment in our country and the real market value of capital.

Secondly, it would be appropriate to harmonize the principles of the assessment standards of developed countries with the national standard in our country. Harmonization of the national valuation standard with the principles of valuation standards of developed countries, in turn, allows to determine the investment potential of the joint-stock company and the risk level of the country, and to determine the risk of the capital of the joint-stock company

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