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Business Valuation and Company Value: New Horizons

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Abstract

The aim of the work is to further improve the qualitatively new approach to assessing the value of a business and a company, which has been proposed by us earlier. The methodology for collecting and processing data required for assessing a business and a company is considered in detail. A more detailed accounting of data on financial income flows CF and the discount rate WACC(n) for the entire period of the company's existence or from the moment of its IPO (in increments of one year), and not only for the year of valuation, allows us to more accurately take into account the influence of the retrospective period (which was taken into account within the framework of the Brusov-Filatova consideration, but less accurately) and more accurately assess the business and capitalization of the company. Application of a new methodology to a couple of companies: PJSC "PIK-specialized developer" (PIKK) and Yandex (YNDX.ME) has been done.

Keywords

Business Valuation, Company Value, Discounted Income Method, CAPM, CAPM 2.0, Brusov-Filatova-Orekhova (BFO) Theory, Modigliani-Miller (MM) Theory

1. Introduction

1.1. Business Valuation and Company Value

Business valuation and company value play a very important role.

The objectives of business valuation may be: making an informed investment decision; buying and selling shares and bonds of an enterprise on the stock mar-

ket; making an informed investment decision; buying and selling an enterprise; restructuring an enterprise; merger, liquidation, acquisition, spin-off of an independent company; determining the creditworthiness of an enterprise and the cost of collateral for lending; insurance; taxation, etc.

The enterprise position in the market is determined by an enterprise market capitalization and determines how much investors are willing to pay for its shares.

The value of any asset (shares, bonds, companies, etc.) is equal to the current value of all income received by this asset. Thus, to find the value of a company, it is necessary to find the current value of all income received by the company from the moment of its creation to the current moment, that is, in the retrospective period. And to evaluate a business, it is necessary to find the current value of all future income received by the enterprise in the representative and final periods.

In this paper, further improvement of the qualitatively new approach to assessing the value of a business and a company has been proposed earlier by Brusov and Filatova (2025). We consider in detail the methodology for collecting and processing data required to assess a business and a company. A more detailed accounting of data on financial income flows CF and the discount rate WACC(n) for the entire period of the company's existence or from the moment of its IPO (in increments of one year), and not just for the year of assessment, allows us to more accurately take into account the influence of the retrospective period (which was taken into account by Brusov and Filatova (2025), but less accurately) and more accurately assess the business and capitalization of the company.

Among the three business valuation methods (cost, comparative and income), the income method is the most reliable and accurate. The income method is divided into three approaches: Capital Asset Pricing Model (CAPM), Arbitrage Pricing Theory (APT) and WACC. Brusov and Filatova (2025) modified two methods: CAPM and WACC. They created a new model CAPM 2.0, which simultaneously takes into account business and financial risks (Brusov & Filatova, 2024d).

The main disadvantage of existing valuation methods is the inability to estimate the main valuation parameter—the discount rate. The role of the correct determination of the discount rate in preventing abuses in business valuation, in investments, in determining the fair value of shareholders' dividend income is of decisive importance.

The only theory that allows for a correct assessment of the discount rate is the BFO theory (Brusov et al., 2022a, 2022b, 2022c; Brusov & Tatiana, 2022a, 2022b; Brusov & Filatova, 2023; Brusov et al., 2023a, 2023b, 2023c), which allows for the calculation of the WACC dependence on the company's age. This allows for a link between the retrospective analysis of the company's financial condition and the representative one. Another difficulty with DCF (discounted cash flow) is the assessment of future cash flows, which is a complex task. The BFO theory could solve this issue in two ways. To do this, it is necessary to use data on cash flows for the past few years. Determining the rate of income growth based on this data allows for 1) improving the forecasting of cash flows in the representative and

reference periods; 2) correctly determining the WACC discount rate, which in this case depends on the rate of income growth.

1.2. Literature Review

There are three methods used to value a business: CAPM, APT, and WACC. CAPM uses the risk-free rate as the initial return and takes into account only the business risk associated with investing in a specific asset, not with investing in the market as a whole or in an industry. APT is a multi-factor theory, as opposed to the single-factor CAPM.

The WACC method is the most powerful and adequate. It is based on the application of two main theories of capital structure (the Brusov-Filatova-Orekhova (BFO) theory and the Modigliani-Miller (MM) theory). They take into account the financial risk arising from the use of debt financing. The BFO theory can be applied to a company of any age, while the MM theory is of perpetual nature (Brusov et al., 2022a, 2022b, 2022c; Brusov & Tatiana, 2022a, 2022b; Brusov & Filatova, 2023; Brusov et al., 2023a, 2023b, 2023c).

The Capital Asset Pricing Model (CAPM) was developed by Sharpe (1964), Lintner (1965), Treynor (1965), and Mossin (1966) and is based on portfolio theory. Although CAPM is still widely used, analysis of data on numerous listed companies has shown that the CAPM results on company profitability differ significantly from actual ones. The reasons for this discrepancy are related to the intrinsic properties and shortcomings of the model. Several modifications of CAPM have been developed that approach it closer to real conditions (Fama & French, 1992, 1993, 1995; Hamada, 1969, 1972; Fama, 1965; Brusov et al., 2023a, 2023b, 2023c, 2023d). Brusov et al. (2023a, 2023b, 2023c, 2023d) took into account financial risk together with business risk. Hamada (1969, 1972) tried to take into account financial risk. As is known, the classical CAPM takes into account only business risk. However, in practice, companies have debt financing, which means it is necessary to take into account financial risk as well.

Brusov, Filatova, Kulik (Brusov et al., 2024a, 2024b, 2024c) took into account business and financial risk simultaneously. They created the CAPM 2.0 model and showed the incorrectness of Hamada (1969, 1972) results. In CAPM 2.0, the CAPM model and the Modigliani-Miller (1958, 1963) (MM) theory were combined. CAPM takes into account business risk (market or industry). The Modigliani-Miller (MM) theory describes a specific company and takes into account financial risks arising from debt financing. Combining CAPM and the Modigliani-Miller theory made it possible to take into account both types of risks: business and financial. Hamada (1969, 1972) did this phenomenologically, and Brusov, Filatova, Kulik (2024a, 2024b, 2024c) combined these two approaches analytically.

As shown by Brusov et al. (2024a, 2024b, 2024c, 2024d) within the CAPM 2.0 model, Hamada's results are incorrect. Brusov et al. (2024a, 2024b, 2024c, 2024d) were the first to discover, that in addition to beta-coeeficient renormalization, got by Hamada, two additional terms: the renormalized risk-free return and a term

depending on the cost of debt kd. Most listed companies use debt financing, so Hamada's results are not applicable to them, unlike the CAPM 2.0 model (Brusov et al. 2024a, 2024b, 2024c, 2024d), which is applicable to companies with leverage.

Fama and French (1992, 1993, 1995) and Fama (1965) showed that future returns depend on such parameters as firm size, industry affiliation etc. They created three- and five-factor models (Fama & French, 1992, 1993, 1995).

Arbitrage Pricing Theory (APT) was created by Ross (1976). The APT formula, unlike the single factor CAPM, has multiple factors that include non-corporate factors, which requires the beta of an asset to be relative to each specific factor. These factors can affect the return of an asset and must be analytically determined by users. This is why investors prefer to use CAPM to estimate the expected rate of return rather than using APT.

2. New Methodology

This article presents a new methodology for valuing a business and company value. Below we discuss aspects of the new methodology in detail.

There are two main parameters in the evaluation of a business and the capitalization of a company: financial flows and discount rates, since the value of any asset is equal to the sum of the discounted income generated by this asset.

2.1. Financial Flows

When collecting data on financial flows, several questions arise: 1) for what period are incomes taken into account, 2) what incomes are taken into account. The answers are as following:

1) Data is required for the entire period of the company's existence, or from the moment of its IPO.

2) Income can be calculated by stock quotes (with taking into account their number, if it changes), or by EBIT(DA), or by a more complex formula that takes into account a number of additional parameters.

One of the difference from Brusov-Filatova (BF) (Brusov & Filatova, 2025) case is that the data on financial flows are collected for the entire period of the company's existence, or from the moment of its IPO, and not just for the year of valuation.

2.2. The Discount Rate

To find the discount rate and its dependence on time within the framework of the BFO theory, it is necessary to know the parameter k_0 (the value of equity capital and WACC at zero leverage). It is determined as follows:

1) The following data from the company's reporting for the year preceding the year of assessment are collected:

$$\mu; L; k_d; t.$$

Here μ is company yield; L is leverage level; k_d is cost of debt and t is tax on

profit.

2) If μ > 0 μ should be cleaned from leverage, by using Modigliani-Miller (MM) formula for cost of equity:

$$\mu = k_0 + L\left(k_0 - k_d\right)\left(1-t\right)$$

$$k_0 = \frac{\mu_i + Lk_d\left(1-t\right)}{1+L\left(1-t\right)}$$

(2a) If for the year preceding the year of assessment μ < 0, then it is necessary to shift to the year in which the yield μ > 0. There is alternative method by A. Brusova (2011), which allows to find k_0 at any yield.

Unlike the BF case (Brusov & Filatova, 2025), the data on the discount rate WACC(n) (and its dependence on company age n) are used for the entire period of existence of the company or from the moment of its IPO (in one-year increments), and not only for the year of assessment.

A more detailed accounting of data on financial income flows CF and the discount rate WACC(n) for the entire period of the company's existence or from the moment of its IPO (in increments of one year), and not only for the year of valuation, allows us to more accurately take into account the influence of the retrospective period (which was taken into account within the framework of the BF consideration (Brusov & Filatova, 2025), but less accurately) and more accurately assess the business and capitalization of the company.

2.3. Company Value

We consider three time periods (see **Figure 1**):

1) retrospective period (from the moment of creation (entering the market) of the company until the moment of evaluation (n_1));

2) representative period (from the moment of assessment (n_1) to the end of this period (n_2): usually 5 - 10 years);

3) terminate period (finite (until moment (n_3), or infinite): in the first case, the BFO theory is used; in the second case, its perpetuity limits the MM theory).

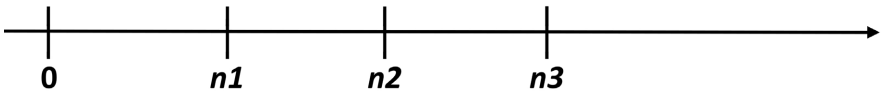

Figure 1. Three time periods: retrospective period (0-n_1); representative period (n_1-n_2); and terminate period (n_2-n_3).

To calculate the capitalization of company V it is necessary:

1) Collect and process company data (links to websites) for the entire period of the company's existence or from the moment of its IPO (in increments of one year):

a) CF for each year (few methods):

- by stock quotes;
- taking into account EBIT, depreciation, capital expenditures, increase in working capital, payment of taxes taking into account the tax shield etc. (see formu-

las below)

There are three types of cash flows:

Capital asset cash flow (CCF)

$$\mathrm{CCF} = \mathrm{EBIT} + \mathrm{Depreciation} - \mathrm{Capital\ Expenditures} - \mathrm{Working\ Capital\ Increase} - \mathrm{Actual\ Taxes}\left(\text{payment of taxes taking into account the tax shield}\right).$$

$$\text{Here Actual Taxes} = \mathrm{Tax\ Rate}\left(\mathrm{EBIT} - \mathrm{Interest}\right).$$

Equity cash flow (ECF)

$$\mathrm{ECF} = \mathrm{EBIT} + \mathrm{Depreciation} - \mathrm{Capital\ Expenditures} - \mathrm{Working\ Capital\ Increase} - \mathrm{Interest} - \mathrm{Debt\ payments} + \mathrm{Debt\ issues} - \mathrm{Actual\ Taxes}$$

Invested capital cash flow (FCF)

$$\mathrm{FCF} = \mathrm{EBIT} + \mathrm{Depreciation} - \mathrm{Capital\ Expenditures} - \mathrm{Working\ Capital\ Increase} - \mathrm{Interest} - \mathrm{Debt\ payments} - \mathrm{Hypothetical\ Taxes}\left(\mathrm{Tax\ rate} \times \mathrm{EBIT}\right)$$

2) a) Collect the following data for the assessment year (2023)

$$\mu, t, k_d, \mathrm{D}, \mathrm{S}, \mathrm{L} = \mathrm{D}/\mathrm{S}.$$

Here μ is profitability, t is tax on profit, k_d is the cost of debt, D is the value of debt, S is the value of equity and $L = D/S$ is the level of leverage.

b) To find the parameter k_0 from the MM equation for k_e

$$\mu_i = \mu_0 + L\left(\mu_0 - k_d\right)\cdot\left(1-t\right) \tag{1}$$

Find k_0 from the formula (2) below

$$k_0 = \mu_0 = \frac{\mu_i + Lk_d \cdot \left(1-t\right)}{1 + L\cdot\left(1-t\right)} \tag{2}$$

3) Using the BFO formula, we find the WACC(n) dependence (n runs from 1 to the age of the company in 2023)

$$\frac{1-\left(1+\mathrm{WACC}\right)^{-n}}{\mathrm{WACC}} = \frac{1-\left(1+k_0\right)^{-n}}{k_0 \cdot \left(1 - w_d t\left[1-\left(1+k_d\right)^{-n}\right]\right)} \tag{3}$$

For a fixed n (1, 2, …) we find WACC (by selecting the parameter (WACC)) and plot the WACC(n) dependence graph using Excel tables.

Alternative method for finding WACC(n)—using programming language Python.

4) To calculate the capitalization of company V, we use the following formula

$$\mathrm{V} = \mathrm{CF}_{23} + \mathrm{CF}_{22}\cdot\left(1+\mathrm{WACC}_{23}\right) + \mathrm{CF}_{21}\cdot\left(1+\mathrm{WACC}_{23}\right)\cdot\left(1+\mathrm{WACC}_{22}\right) + \cdots \tag{4}$$

5) Compare the company's capitalization calculated for two (or more) cash flows and the actual value of the company's market capitalization.

2.4. Business Valuation

To evaluate the business, it is necessary to continue calculating the dependence of WACC(n) for five to ten years (or maybe more) (so we will consider 5-year and 10-year horizons). At the same time we can consider constant CF, or variable CF.

In the first case one should use the following formula for representative (V_1) and terminate (V_2) periods:

For 5-year horizon

$$V_1 = CF_{23} \cdot \left[\left(1+WACC_{24}\right)^{-1} + \left(1+WACC_{24}\right)^{-1}\left(1+WACC_{25}\right)^{-1} + \cdots + \left(1+WACC_{24}\right)^{-1} + \cdots + \left(1+WACC_{28}\right)^{-1} \right] \tag{5}$$

$$V_2 = \frac{CF_{23}}{WACC_{28}\left(1+WACC_{24}\right)+\cdots+\left(1+WACC_{28}\right)} \tag{6}$$

$$V = V_1 + V_2 \tag{7}$$

For 10-year horizon

$$V_1 = CF_{23} \cdot \left[\left(1+WACC_{24}\right)^{-1} + \left(1+WACC_{24}\right)^{-1}\left(1+WACC_{25}\right)^{-1} + \cdots + \left(1+WACC_{24}\right)^{-1} + \cdots + \left(1+WACC_{33}\right)^{-1} \right] \tag{8}$$

$$V_2 = \frac{CF_{23}}{WACC_{33}\left(1+WACC_{24}\right)+\cdots+\left(1+WACC_{33}\right)} \tag{9}$$

$$V = V_1 + V_2 \tag{10}$$

The terminal period here (in the formulas (6) and (9)) is considered infinite. For a finite terminal period, it is necessary to continue calculating WACC(n) within the framework of the BFO theory.

3. Application of New Methodology to Some Companies

Below we apply new methodology to a couple of companies. We start from PJSC "PIK-specialized developer" (PIKK).

3.1. PJSC "PIK-Specialized Developer" (PIKK)

The company was founded in 1994 as the First Mortgage Company. In the 2000s, several factories producing building materials and components for construction were acquired. In July 2007, the company went public, and its securities began to be traded on the Moscow and London stock exchanges.

To assess the value of a business and a company, one needs to do the following:

1) Collect and process company data (links to websites) for the entire period of the company's existence or from the moment of its IPO (in increments of one year):

a) CF for each year (two methods):

- by stock quotes;
- taking into account EBIT, depreciation, capital expenditures, increase in working capital, payment of taxes taking into account the tax shield (see below).

Let's calculate CF using the first method (by quotes), using the formula:

CF = number of shares at the end × share price at the end
– number of shares at the beginning × share price at the beginning.

We'll get the following Tables 1-4 and Figure 2.

Table 1. Data for the first method.

year	stock price at the beginning of the year, rubles	stock price at the end of the year, rubles	number of shares at the beginning of the year	number of shares at the end of the year	CF, rubles	WACC	calculation V step by step, rubles
2007	657	739.97	456260384	456260384	37855924060	0.11026104	1.95251E+11
2008	740	385	456260384	493260384	−1.47727E+11	0.10861657	−6.87288E+11
2009	30.21	123.45	493260384	493260384	45991598204	0.1081376	1.93091E+11
2010	129.89	122.89	493260384	493260384	−3452822688	0.10793723	−13084067558
2011	128.5	77	493260384	493260384	−25402909776	0.10769972	−86902029843
2012	77.49	67.5	493260384	493260384	−4927671236	0.10764139	−15219101106
2013	64.73	70.5	493260384	660497344	14636318096	0.10765044	40810920692
2014	67.7	187.3	660497344	660497344	78995482342	0.10767512	1.98854E+11
2015	191.7	219	660497344	660497344	18031577491	0.10773358	40976093721
2016	215.5	290	660497344	660497344	49207052128	0.10779863	1.0094E+11
2017	285.9	35	660497344	660497344	26816192166	0.10785439	49653564816
2018	327.4	376.3	660497344	660497344	32298320122	0.10794756	53977660022
2019	374.7	400.4	660497344	660497344	16974781741	0.10802416	25602895825
2020	407	595.9	660497344	660497344	1.24768E+11	0.1080999	1.69828E+11
2021	597.9	1102.4	660497344	660497344	3.33221E+11	0.10817123	4.0929E+11
2022	1155.7	602.5	660497344	660497344	−3.65387E+11	0.10824475	−4.04964E+11
2023	604.2	677	660497344	660497344	48084206643	0.10831554	48084206643

For stock quotes—https://ru.investing.com/equities/pik_rts https://www.moex.com/ru/issue.aspx?board=TQBR&code=PIKK

For number of shares https://www.kommersant.ru/quotes/ru000a0jp7j7 https://stockchart.ru/fundamental/MSFO/PIKK/number_of_shares https://marketcap.ru/stocks/PIKK/financial-statements/income-statement/number-of-shares

Let's calculate CF using the second method, using the formula:

$$\mathrm{CCF} = \mathrm{EBIT} + \mathrm{Depreciation} - \mathrm{Capital\ Expenditures} - \mathrm{Working\ Capital\ Increase} - \mathrm{Actual\ Taxes}\left(\text{payment of taxes taking into account the tax shield}\right).$$

$$\text{Here Actual Taxes} = \mathrm{Tax\ Rate}\left(\mathrm{EBIT} - \mathrm{Interest}\right).$$

Table 2. Data for the second method.

year	EBIT, rubles.	depreciation, rubles	income tax, rubles	CAPEX, rubles	Working capital increase, rubles	CF, rubles	WACC	calculation V step by step, rubles
2007	14100000000	777000000	3595000000	1521200000	1487000000	8273800000	0.110261	42674037626
2008	−6920000000	1076000	925000000	196100000	3502200000	−1.1542E+10	0.1086166	−53699080467
2009	−3260000000	860000000	218000000	460000000	2000000000	−5078000000	0.1081376	−21319467628
2010	−1010000000	759000000	1099000000	420000000	15000000000	−1.677E+10	0.1079372	−63547952726
2011	7800000000	736000000	152900000	470000000	12000000000	−4086900000	0.1076997	−13981071810
2012	10470000000	860000000	125500000	450000000	14520000000	−3765500000	0.1076414	−11629737957
2013	13740000000	705000000	235000000	480000000	15680000000	−1950000000	0.1076504	−5437248277
2014	12460000000	737000000	227000000	428000000	23000000000	−1.0458E+10	0.1076751	−26325752189
2015	17510000000	1124000	179300000	4670000000	10100000000	2561824000	0.1077336	5821650400
2016	23650000000	930000000	252600000	1000000000	2000000000	2.1327E+10	0.1077986	43749583415
2017	16440000000	636620000	200000000	2501000000	10200000000	4175620000	0.1078544	7731687520
2018	34630000000	2237000000	5446000000	3882000000	2500000000	2.5039E+10	0.1079476	41845725233
2019	62330000000	3024000000	8390000000	4150000000	20000000000	3.2814E+10	0.1080242	49493032454
2020	1.118E+11	3479000000	6326000000	3200000000	24300000000	8.1453E+10	0.1080999	1.1087E+11
2021	1.4018E+11	4943000000	2.3487E+10	9860000000	13000000000	9.8776E+10	0.1081712	1.21325E+11
2022	45000000000	1522676250	1E+10	5000000000	1500000000	3.0023E+10	0.1082447	33274598640
2023	1.18E+11	3677000000	1.2218E+10	8100000000	16700000000	8.4659E+10	0.1083155	84659000000

2) Collect the following data for 2023 μ, t, kd, D, S, $L = D/S$ and find the parameter k_0 from the MM equation for k_e

$$\mu_i = \mu_0 + L\left(\mu_0 - k_d\right)\cdot\left(1-t\right)$$

Find k_0

$$k_0 = \mu_0 = \frac{\mu_i + Lk_d\cdot\left(1-t\right)}{1+L\cdot\left(1-t\right)}$$

Table 3. Data for 2023.

Data for 2023							
μ	t	k_d	D	S	L	k_0	wd
0.120489904	0.2	0.0967	1.1257E+11	3.25436E+11	0.345905554	0.115333546	0.257005815

Table 4. Dependence WACC(n).

n	WACC
1	0.110261038
2	0.108616573
3	0.108137601
4	0.107937234
5	0.107699721
6	0.107641394
7	0.10765044
8	0.107675122
9	0.107733576
10	0.107798631
11	0.107854391
12	0.10794756
13	0.108024156
14	0.1080999
15	0.108171229
16	0.108244747
17	0.10831554
18	0.108385468
19	0.108450442
20	0.108512351
21	0.108571157
22	0.108626871
23	0.108678302
24	0.10872815
25	0.108775108
26	0.108819278
27	0.108860766

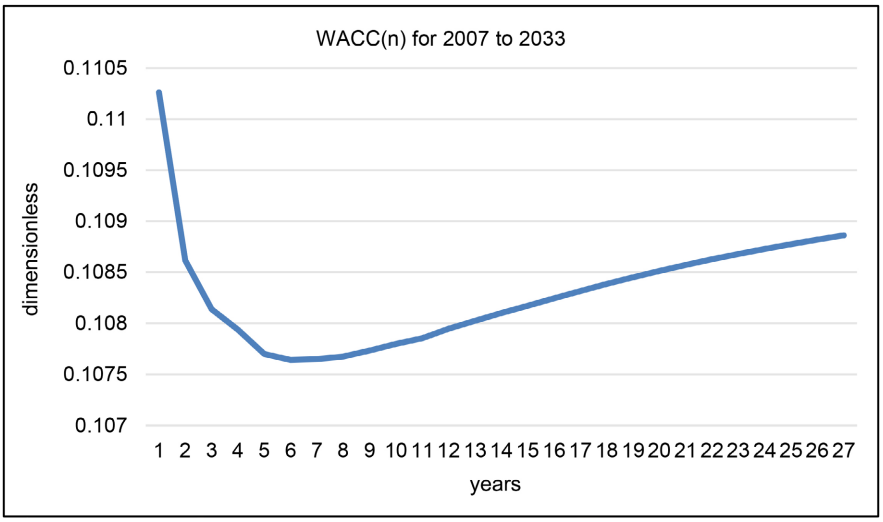

Figure 2. Dependence WACC(n) for 2007 to 2033.
https://stockchart.ru/Financial/PIKK
https://finrange.com/ru/company/MOEX/PIKK/financial-statements
https://pik-group.ru/about/news-and-reports/reports/financial-results
https://pik-group.ru.media.pik-service.ru/attachment/0/651/konsolidirovannaya-finansovaya-otchetnost-po-msfo-_9f1cd5dc7d6e432abae77a242a03ea31.pdf
https://pik-group.ru/about/news-and-reports/reports/financial-results
https://smart-lab.ru/q/PIKK/MSFO/capex/.

3.1.1. Company Value

Company value could be calculated by formula (4).

In the first case company value is equal to V = 318,902,000,000 rubles, in the second—V = 345,504,000,000 rubles. Or in billions of US dollars in the first case V = 3.08326 billion US dollars, in the second—V = 3.34046 billion US dollars.

Market value in 2023 V = 4.334 B$ (448.3 B rubles)

It is obvious that the company value calculated by the two methods is quite close, but underestimated in relation to the market value. This may be due to the fact that business risk was not taken into account in the current consideration (see Brusov and Filatova (2025)).

3.1.2. Business valuation

Using the formulas (5)-(7) one gets the following results for business valuation for 5-year representative period and infinite terminate period (see **Table 5**).

1) According to stock quotes (CF23 = 48,084,206,643 rubles)

Then obtained values (in rubles):

Table 5. Business valuation for 5-year representative period and infinite terminate period (by stock quotes).

V1=	1.78403E+11
V2=	2.64465E+11
V за 28 год=	4.42868E+11

Company valuation in 2028 year will amount to 442,868,000,000 rubles. Or 4.28181 billion US dollars (Table 6, Table 7).

2) Using formula (CF_{23} = 84659000000 rubles)

Table 6. Business valuation for 5-year representative period and infinite terminate period (by formula).

V1=	3.14104E+11
V2=	4.65628E+11
V for 2028	7.79732E+11

Company valuation in 2028 will be 779,732,000,000 rubles. Or 7.53874 billion US dollars.

Table 7. Business valuation for 5-year representative period and infinite terminate period (by two methods).

CF23 by stock quotes, rubles	4.8084E+10
V1=	1.784E+11
V2=	2.6447E+11
V for 2028	4.4287E+11
CF23 by formula, rubles	8.4659E+10
V1=	3.141E+11
V2=	4.6563E+11
V for 2028	7.7973E+11

For 10 years:

Let us provide business valuation for 10-year representative period and infinite terminate period (by two methods) (Table 8).

Table 8. Dependence WACC(n) for period 2024 to 2033.

	WACC
2024	0.108385468
2025	0.108450442
2026	0.108512351
2027	0.108571157
2028	0.108626871
2029	0.108678302
2030	0.10872815
2031	0.108775108
2032	0.108819278
2033	0.108860766

3) According to stock quotes (CF23 = 48,084,206,643 rubles)

Results for business valuation for 10-year representative period and infinite terminate period. (in rubles) is shown in Table 9.

Table 9. Business valuation for 10-year representative period and infinite terminate period (by stock quotes).

V1=	2.84917E+11
V2=	1.57479E+11
V for 2033	4.42396E+11

Company valuation in 2033 will be 442,396,000,000 rubles. Or 4.27725 billion US dollars (Table 10).

4) Using formula (CF23 = 84,659,000,000 rubles)

Table 10. Business valuation for 10-year representative period and infinite terminate period (using formula).

V1=	5.01636E+11
V2=	2.77264E+11
V for 33	7.789E+11

Company valuation in 2033 will be 778,900,000,000 rubles. Or 7.5307 billion US dollars.

Business valuation for 10-year representative period and infinite terminate period (by two methods) are shown in Table 11.

Table 11. Business valuation for 10-year representative period and infinite terminate period (by two methods).

		quote	formula
Business valuation, Billion $	5 years	4.28181	7.53874
	10 years	4.27725	7.5307

3.1.3. Comparison of Current Results with Ones by Brusov-Filatova (2025)

To evaluate a business for a 5-year and 10-year representative period and an infinite terminal period (using two methods) within the framework of the Brusov-Filatova method (Brusov & Filatova, 2025) it is necessary to use the following formulas:

For 5-year horizon

$$V_1 = \frac{CF_{23}}{WACC(23)} \cdot \left(1 - \left(1 + WACC(23)\right)^{-(5)}\right) \tag{11}$$

$$V_2 = \frac{CF_{23}}{WACC(28)} \tag{12}$$

$$V = V_1 + \frac{V_2}{(1+WACC)^5} \tag{13}$$

For 5-year horizon

$$V_1 = \frac{CF_{23}}{WACC(23)} \cdot \left(1 - (1+WACC(23))^{-10}\right) \tag{14}$$

$$V_2 = \frac{CF_{23}}{WACC(33)} \tag{15}$$

$$V = V_1 + \frac{V_2}{(1+WACC)^{10}} \tag{16}$$

Formulas (11)-(16) used in the Brusov-Filatova (BF) approach (Brusov & Filatova, 2025) differ from formulas (5)-(10) used here, since in this case we use more detailed information about the financial flows CF and the discount rate WACC(n).

Below, in **Table 12**, we compare the current results with the results, obtained within the framework of the Brusov-Filatova (2025) approach regarding the valuation of the PIKK company's business.

Table 12. Comparison of current results with the results obtained within the framework of the Brusov-Filatova approach (Brusov & Filatova, 2025) regarding the valuation of the PIKK company's business.

approach		Current approach		BF approach	
		quote	formula	quote	formula
Business valuation, Billion $	5 years	4.28181	7.53874	4.3148	7.5968
	10 years	4.27725	7.5307	4.314	7.5962

Comparison of the present more detailed method with the method developed by us earlier shows that 1) when assessing a business, both methods give very close results. Thus, for assessing a business, the use of the less detailed previous method is justified. This is also important from the point of view that the first method requires much less information and time for its processing. Thus, the proposed approach is more accurate, than BF one since it more accurately takes into account both main business valuation parameters: CF and WACC.

2) But when assessing capitalization, the new method gives a more adequate result, practically close to the market capitalization of the company, while the result of the previous method (Brusov & Filatova, 2025) gives an excess of the market capitalization of the company (sometimes several times).

The difference in the results of the two approaches is due to the following facts. 1) CF is a constant value in the BF approach and a variable value in the current approach (in one-year increments); 2) WACC is a constant value in the BF approach (Brusov & Filatova, 2025) and a variable value in the current approach (in

one-year increments). From the analysis of the WACC(n) dependence, which is a decreasing function of n, it follows that the BF approach uses a much smaller WACC value (for the valuation year), and this leads to an overestimation of the company value due to the formula.

But when valuing a business, both approaches use approximately the same WACC values (with a small difference), and this leads to approximately similar business valuation results.

However, for a more accurate assessment of a business and a company, as shown in Brusov-Filatova (2025), it is necessary to take into account business risk along with financial risk, using CAPM 2.0 approach, developed by Brusov et al. (2024d).

4. Yandex Company (YNDX.ME)

Below we consider Yandex company (YNDX.ME) (Table 13, Table 14).

Let's collect and process data from company reports and websites.

Table 13. Data for Yandex company.

n	year	stock price at the beginning of the year, rubles	stock price at the end of the year, rubles	number of shares	CF formula	μ	t	Kd
1	2015	824	1017	3.65E+08	−1073184	0.097087	0.2	0.0967
2	2016	880	1116	3.65E+08	−3.9E+08	0.127273	0.2	0.0967
3	2017	1008	1683	3.65E+08	−1.3E+08	0.484127	0.2	0.0967
4	2018	1560	1701	3.65E+08	−2.3E+08	−0.03077	0.2	0.0967
5	2019	1528	2421	3.65E+08	−3.6E+08	0.408377	0.2	0.0967
6	2020	2152	4563	3.65E+08	2.93E+11	0.884758	0.2	0.0967
7	2021	4192	4032	3.65E+08	−1.8E+11	−0.14504	0.2	0.0967
8	2022	3496	1638	3.65E+08	−1.2E+10	−0.58352	0.2	0.0967
9	2023	1480	2349	3.65E+08	8.79E+10	0.410811	0.2	0.0967

Table 14. Data for Yandex company (continued).

n	year	D	S	CF quote	L	k0	wd	WACC
1	2015	7.79E+08	6.2E+08	7.04E+10	1.256013	0.096893	0.55674	0.341769
2	2016	6.73E+08	5.17E+08	8.61E+10	1.302677	0.111671	0.565723	0.334206
3	2017	5.88E+08	4.6E+08	2.46E+11	1.277154	0.288332	0.560855	0.330102
4	2018	4.1E+08	3.21E+08	5.15E+10	1.275982	0.033621	0.560629	0.32733
5	2019	2.52E+08	2.16E+08	3.26E+11	1.163094	0.258151	0.537699	0.325191

Continued

6	2020	9.22E+10	3.26E+11	8.8E+11	0.282883	0.739327	0.220506	0.323391
7	2021	9.78E+10	2.58E+11	−5.8E+10	0.378922	−0.0888	0.274796	0.32179
8	2022	5.12E+10	3.16E+11	−6.8E+11	0.161867	−0.50554	0.139316	0.320316
9	2023	1.55E+11	2.96E+11	3.17E+11	0.524436	0.317975	0.34402	0.318929

Based on the Yandex data from Table 13 and Table 14 and using Python, we obtain the following results on Yandex capitalization and its business valuation.

Results

1) Yandex capitalization in 2023

In the first case, with CF calculated using the stock price, capitalization V = $4.98 billion.

In the second case, with CF calculated using the formula, capitalization was V = $4.18 billion.

The actual market capitalization, according to various sources, is $9.13 billion (918.9 billion rubles).

2) Company valuation

CF by formula (EBIT):

Company valuation for 5 years (until 2028): $4.11 billion

Company valuation for 10 years (until 2033): $4.06 billion

CF by stock quotes:

Company valuation for 5 years (until 2028): $4.84 billion

Company valuation for 10 years (until 2033): $4.73 billion

It is obvious that Yandex's capitalization results are understated relative to the market. This may be due to the fact that the current consideration does not take into account business risk.

5. Conclusion and Implications

To further improve the qualitatively new approach to assessing the value of a business and a company the new detailed methodology for collecting and processing data required for assessing a business and a company is considered. A more detailed accounting of data on financial income flows CF and the discount rate WACC(n) for the entire period of the company's existence or from the moment of its IPO (in increments of one year), and not only for the year of valuation, allows us to more accurately take into account the influence of the retrospective period (which was taken into account within the framework of the Brusov-Filatova consideration, but less accurately) and more accurately assess the business and capitalization of the company.

The strength of the study is the detailed and correct determination of the discount rate and financial flow of the company's income, which allows for a more accurate determination of the company's capitalization and assessment of the

business.

Application of a new methodology to a couple of companies: PJSC "PIK-specialized developer" (PIKK) and Yandex (YNDX.ME) has been done. The company value calculated by the two methods (two CF) is quite close, but underestimated in relation to the market value. This may be due to the fact that business risk was not taken into account in the current consideration (see Brusov & Filatova (2025)).

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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