

Business Valuation of a Company in Environmental Management

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Abstract. As a result of many years of generalizations, fairly simple formulas have been developed in countries with developed market economies for determining the value of an evaluated company using the method of industry coefficients, which is not widely used in Russia, since these coefficients are calculated not for all sectors of the economy. The magazine “Financial Bulletin: Finance, Taxes, Insurance, Accounting” describes a method by Khasanov R.Kh., which determines the value of shares and industry ratios of some companies. Using the main provisions, this article presents the calculation of the value of a construction company and the calculation of industry coefficients for the “construction” direction.

1 Introduction

A comparative approach to business valuation is a combination of methods based on the comparison of the valued shares with the shares of peer companies. In the framework of the comparative approach according to Federal Valuation Standard No. 8 “Business Valuation (FVS No. 8): “a business valuator determines the value of stocks, equity shares, shares in the authorized (share) capital, the property complex based on the information about the prices of transactions with stocks, equity shares, shares in the authorized (share) capital, property complexes of peer organizations, taking into account the comparison of financial and production indicators of the activities of peer organizations and the corresponding indicators of the organization doing business, as well as based on the price information about previous transactions with stocks, equity shares, shares in the authorized (share) capital, the property complex of the organization doing business” [1].

The methods of the comparative approach are used in the practice of valuation activities quite widely, except for the industry coefficient method [2-3]. This method has not been adequately distributed in the Russian valuation practice due to the lack of information and certain economic stability. The industry coefficient method is based on the use of recommended ratios between a price and certain financial parameters. Industry coefficients are calculated on the basis of long-term statistical observations by special research institutes over the price of sale of various enterprises and their most important production and financial characteristics.

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2 Methods

In determining the value of the valuation object by methods of the comparative approach, a business valuator should make a phased analysis and calculations, in particular:

1. make a list of peer organizations;
2. select the coefficients reflecting the relationship between the price and performance indicators of the organization, which will be used to calculate the value of the valuation object;
3. calculate the base for determining the multipliers for peer organizations, taking into account the necessary adjustments;
4. calculate the values of multipliers based on the information about peer organizations;
5. calculate the value of own or invested capital of the organization doing business by multiplying the multiplier by the corresponding financial or production indicator of the organization doing business;
6. in the case of availability of the information about the prices of transactions with stocks, equity shares, shares in the authorized (share) capital of the organization doing business, a business valuator can make calculations on the basis of the specified information without taking into account multipliers.

When applying the comparative approach, a business valuator can also apply mathematical and other methods of modeling the value and the choice of models for determining the value is made by a business valuator and must be justified [1,3,4].

3 Valuation and Results

According to the algorithm, based on calculations, five construction enterprises, which are considered among the largest in Russia according to the Forbes list, have been selected [5]. All of them are publicly-traded, so all annual reports are freely available.

Three interval multipliers have been calculated for each of the enterprises:

- value/net profit (V/NP);
- value/cash flow (V/CF);
- value/sales revenue (V/SR).

To determine the multipliers it is necessary to calculate the market value of peer companies. Using the income and cost methods, namely a profit capitalization method, a net asset method and a method of discounting cash flows, the market value of the shares of each peer company has been calculated. The arithmetic average cost of a share has been determined (the calculation is made on the example of Mostotrest PJSC):

The cost of a share (Mostotrest PJSC) = $(92.25+26.07+166.52)/3 = 94.95$ rubles.

The resulting value is multiplied by the number of shares and the total market value of Mostotrest PJSC is calculated:

The value of Mostotrest PJSC = $(282.215.500 \times 94.95)/1.000=26.795.385.88$ thousand rubles.

Similar calculations have been made for other companies, the results are presented in Table 1.

Table 1. Business value of construction companies

| Method | Share value, rubles |
|--------|---------------------|
|--------|---------------------|

| | Mostotrest PJSC | LSR Group PJSC | Globalstroy-Engineering JSC | PIK Group of Companies PJSC | Mosinzhprouekt JSC |
|----------------------------------|-----------------|----------------|-----------------------------|-----------------------------|--------------------|
| Net asset method | 92.25 | 412.53 | 70.43 | 118.50 | 450.93 |
| Profit capitalization method | 26.07 | 214.93 | 76.29 | 14.60 | 36.66 |
| Method of discounting cash flows | 166.52 | 17.70 | 328.99 | 618.35 | 390.54 |
| Arithmetic average | 94.95 | 215.05 | 158.57 | 250.48 | 292.71 |
| Number of shares | 282.215.500 | 103.030.215 | 166.310.416 | 660.497.344 | 87.938.441 |
| Business value, thousand rubles | 26.795.385.88 | 22.157.114.57 | 26.371.575.21 | 165.442.315.3 | 25.740.468.4 |

The values of multipliers and the average value of each multiplier have been calculated (Table 2).

Table 2. Values of multipliers for the construction industry

| Company name | Multiplier | | |
|-----------------------------|------------------|-----------------|---------------------|
| | value/net profit | value/cash flow | value/sales revenue |
| Mostotrest PJSC | 8.87 | 5.12 | 0.13 |
| LSR Group PJSC | 2.78 | 0.75 | 0.16 |
| Globalstroy-Engineering JSC | 6.35 | 4.33 | 1.95 |
| PIK Group of Companies PJSC | 52.45 | 3.64 | 0.94 |
| Mosinzhprouekt JSC | 38.77 | 6.73 | 0.21 |
| Arithmetic average | 21.84 | 4.11 | 0.68 |

Thus, the values of the industry coefficient have been obtained for each financial base (Figure 1).

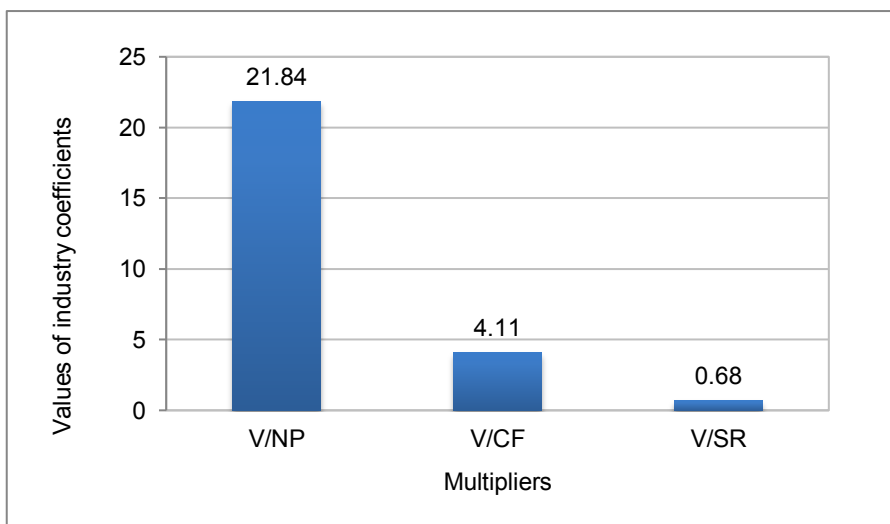


Fig. 1. The values of industry coefficients for the construction industry

After the calculations made, it is possible to calculate the value of the property complex of any company (in particular, RN-Spetsstroy JSC) by the product of the industry coefficient by the corresponding financial base (Table 3).

Table 3. Determination of the company's market value using a method of industry coefficients

| Indicator name | Multipliers | | |
|--|-------------|----------|----------|
| | V/NP | V/CF | V/SR |
| Values of industry coefficients for construction enterprises | 21.84 | 4.11 | 0.68 |
| Valuation base for RN-Spetsstroy JSC, thousand rubles | 34.027 | 37.906 | 263.712 |
| Estimated cost, thousand rubles | 743.297. | 155.982. | 178.685. |
| | 86 | 26 | 68 |
| Arithmetic average, thousand rubles | 359.321.93 | | |

The market value of business of RN-Spetsstroy JSC by the method of industry coefficients is 359.321.39 thousand rubles.

Thus, after having done a little research it became possible to calculate the value of the property complex of a construction company by the product of the industry coefficient by the corresponding financial base.

Let us get down to the calculation of the last two methods in the framework of the comparative approach. The first method to be calculated is a transaction method.

In the framework of the comparative approach it is possible to calculate the value of an enterprise by the transaction method by using market data. Peer companies meeting the following criteria have been selected: the main activity is the construction of residential and non-residential buildings, all companies have approximately the same amount of revenue and net profit. In all peer companies the qualified workers are employed, whose age composition is different, the number of workers ranges from 70 to 150 people. Table 4 calculates the growth rate of such indicators as revenue and profit.

Table 4. The growth rate of peer enterprises

| Company | Revenue, thousand rubles | | Growth rate | Profit, thousand rubles | | Growth rate |
|------------------------|--------------------------|------------------|-------------|-------------------------|------------------|-------------|
| | Reference period | Reporting period | | Reference period | Reporting period | |
| 1. Ishimagrostroy OJSC | 311.700 | 406.100 | 1.30 | 39.000 | 39.200 | 1.01 |
| 2. Perestroy-KA! LLC | 393.600 | 468.105 | 1.19 | 21.800 | 21.867 | 1.00 |
| 3. SMP-280 JSC | 321.200 | 258.280 | 0.80 | 36.500 | 19.245 | 0.53 |
| 4. TES PJSC | 168.800 | 125.800 | 0.75 | 12.600 | 23.150 | 1.84 |
| 5. Alligator LLC | 287.372 | 363.509 | 1.26 | 31.200 | 37.759 | 1.21 |
| 6. Zochiy PSF LLC | 49.200 | 316.200 | 6.43 | 20.900 | 70.300 | 3.36 |
| 7. Sibzhilstroy OJSC | 238.900 | 251.617 | 1.05 | 11.700 | 14.652 | 1.25 |
| 8. Stroyimpuls LLC | 55.700 | 206.153 | 3.70 | 2.200 | 13.269 | 6.03 |
| RN-Spetsstroy JSC | 212.569 | 263.712 | 1.24 | 60.975 | 34.027 | 0.56 |

According to the data obtained in the table, most of the peer organizations have a tendency to develop and increase revenue and profit, there is a slight decrease in indicators, besides the valuation object of RN-Spetsstroy JSC shows the dynamics of a decrease in net profit in the reporting period by 44%. The main advantage of RN-Spetsstroy JSC is that it is included in the Rosneft group of companies and this protects the organization from many risks, the company does not need to constantly look for customers, as it cooperates with all Rosneft subsidiaries in the Tyumen region, including in Khanty-Mansi and Yamal-Nenets Autonomous Districts.

Coefficients of sales profitability of peer organizations as compared with RN-Spetsstroy JSC have been calculated in Table 5.

Table 5. The analysis of peer enterprises

| Company | Financial indicators | | | |
|------------------------|--------------------------|-------------------------|-----------------------------------|---------------------|
| | Revenue, thousand rubles | Profit, thousand rubles | Enterprise value, thousand rubles | Net profit/ Revenue |
| 1. Ishimagrostroy OJSC | 406.100 | 39.200 | 270.325 | 9.65 |
| 2. Perestroy-KA! LLC | 468.105 | 21.867 | 244.772 | 4.67 |
| 3. SMP-280 JSC | 258.280 | 19.245 | 214.265 | 7.45 |
| 4. TES PJSC | 125.800 | 23.150 | 401.800 | 18.40 |
| 5. Alligator LLC | 363.509 | 37.759 | 377.883 | 10.39 |
| 6. Zodchiy PSF LLC | 316.200 | 103.000 | 337.200 | 32.57 |
| 7. Sibzhilstroy OJSC | 251.617 | 14.652 | 139.600 | 5.82 |
| 8. Stroyimpuls LLC | 206.153 | 13.269 | 205.600 | 6.44 |
| RN-Spetsstroy JSC | 263.712 | 34.027 | - | 12.90 |
| Arithmetic average | 295.497. 33 | 34.018.78 | 243.493.89 | 12.03 |

Figure 2 presents the dynamics of profitability.

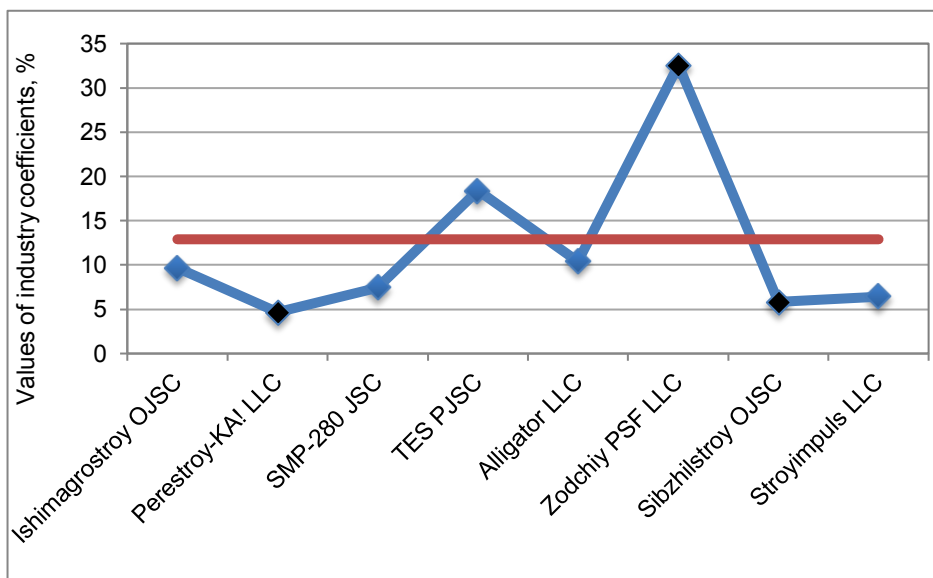


Fig. 2. Dynamics of sales profitability

Table 5 and Figure 2 show that the values of profitability coefficients of three companies differ from the valuation object RN-Spetsstroy JSC upward or downward, thus Company 6 should be excluded – the profitability of the peer company (32.57%) is much higher than the enterprise under consideration (12.9%). Enterprises 2 and 7 should also be excluded, since the coefficient of sales profitability is 4.67% and 5.82% respectively, which is significantly less than that of the company subject to valuation – 12.9%.

Interval multipliers have been calculated on the basis of the data obtained, profit and revenue were used as the financial base. The average multiplier by peer companies has been determined and the estimated value of the property complex has been found in Table 6.

Table 6. Calculation of multipliers

| Peer companies | Multiplier | |
|------------------------|---------------|--------------|
| | value/revenue | value/profit |
| 1. Ishimagrostroy OJSC | 0.67 | 6.90 |
| 3. SMP-280 JSC | 0.83 | 11.13 |
| 4. TES PJSC | 3.19 | 17.36 |
| 5. Alligator LLC | 1.04 | 10.01 |
| 7. Sibzhilstroy OJSC | 0.00 | 0.00 |
| 8. Stroyimpuls LLC | 1.00 | 15.49 |
| Average multiplier | 1.35 | 12.18 |
| Estimated value | 354.748.75 | 414.370.47 |

Thus, two estimated values of the property complex of the enterprise have been obtained by using two different multipliers. Table 7 weighed the obtained values to obtain the agreed value of the company.

Table 7. Calculation of the weighted result of the company value

| Multiplier | Estimated value, thousand rubles | Proportion | Weighted result, thousand rubles |
|---------------|----------------------------------|------------|----------------------------------|
| value/revenue | 354.748.75 | 0.46 | 163.624.41 |
| value/profit | 414.370.47 | 0.54 | 223.246.12 |
| Amount | 769.119.22 | 1.00 | 386.870.53 |

The market value of the property complex of RN-Spetsstroy JSC calculated by the transaction method amounts to 386.870.53 thousand rubles.

4 Conclusions

It must be emphasized that a business valuator can apply various cost modeling methods when applying the comparative approach. In this case, the use of the comparative approach to determine the company value requires compliance with a phased analysis and calculations.

This article shows the possibility of obtaining the agreed company value based on the calculation of the two values of the company's property complex with the use of different

multipliers. A significant limitation in the application of this approach is the need for information on the activities of peer companies.

References

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