The Adjusted Net Asset Valuation Method – Connecting the dots between Theory and Practice

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Abstract

The valuation of an entity is an intricate process leading to the establishment of its market value. A company's value is created, on one hand, by its assets and liabilities and, on the other hand, by its capacity to generate future economic benefits. In order to evaluate the equity of a company a balance sheet-based valuation method is used, most commonly the adjusted net assets valuation method.

The goal of this paper is to present the theoretical background of this method as well as its practical application. We will first analyze the main theoretical issues regarding the corrections that need to be performed in order to transform the book value of assets and liabilities to their market value, afterwards proceeding to an example on how this method is applied to the balance sheet of a company. Finally, we will conclude on the importance of the method for a company's evaluation process.

Key words: adjusted net assets method, balance sheet, book value, market value
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1. Introduction

The valuation of a company is a complex activity whose main purpose is to determine the market value of the business. Since value is not a sheer concept, the scientific literature and the practitioners' experience led to the development of different types of valuation methods, each capable to deliver a specific approach to what is valuable in an entity's activity.

The most commonly used type of value when evaluating an asset is its market value. According to the International Valuation Standards Council the market value represents "the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgably, prudently and without compulsion." (IVSC, 2014)

The same IVSC defines the enterprise value as "the total value of the equity in a business plus the value of its debt or debt-related liabilities, minus any cash or cash equivalents available to meet those liabilities." (IVSC, 2014)

The structure of an enterprise's value can only be understand if we take under consideration a double approach, according to which a business represents a sum of assets, rights and liabilities, on one side, and a functional system, capable to generate economic benefits, on the other side. In other words, the value of a company is determine by its present value, calculated based on the assets and liabilities situation, but taking under account its future results, estimated based on forecasts of the evolution of its activity.

Therefore, one of the first steps that needs to be taken in valuating a company is the calculation of the market value of its assets and liabilities. In order to do that the starting point is the balance sheet that provides the book value of the assets and liabilities.

In the next chapter we will present a theoretical approach of the balance sheet-based valuation methods.

2. A short theoretical background

The balance sheet-based valuation methods are traditionally used to determine the value of a company's assets and liabilities. They determine the value from a static point of view and do not consider the company's futures evolution or external influence factor such as money's temporary value and the industry's situation. Being based on the balance sheet, they also tend to ignore elements that cannot be quantified in the financial situations, such as human resources quality, market position, contracts etc. (Fernandez, 2007, p. 6).

The asset based approach is defined by the International Valuation Standards Council as "a method of indicating the value of a business or a business interest based on a summation of the net value of the individual assets and liabilities." (IVSC, 2014)

The assets-based approach to business' valuation finds its stating point in the information reported in the balance sheet. The first method that can be applied to determine the net value of assets is the book value method that calculates the value of a company by subtracting the value of its liabilities from that of its assets. But such an approach is not without fault since book value is calculated based on accounting principles and has little to do with the market value of a company.

Some of the disadvantages of the book value method are overcome by the adjusted net value approach. All assets and liabilities are reevaluated based on their market value, income or cost, therefore providing a more accurate perspective on the economic value of a company's equity.

Calculating the adjusted net assets value of an enterprise is a three steps procedure. First all the assets are separated into operational and non-operational assets, secondly all the operational assets are reevaluated to their market value and finally, the adjusted net assets value is calculated by subtracting the corrected value of liabilities from the corrected value of assets.

The separation of assets into operational and non-operational is made based on the degree to which they participate in the achievement of the company's income. After this separation is made, all the operational assets and liabilities need to be reevaluated by taking under consideration value influencing factors such as market prices evolution, exchange rates, technical conditions or usage degree, accounting policies and any other factor that was highlighted by the diagnosis of the entity's activity. Robu et. al. provides a detailed description of the methods used for valuating each category of assets and liabilities.

In the following chapter we will try to provide a practical example of the use of adjusted net assets valuation method.

3. Appling the adjusted net assets method into practice

To illustrate the practical application of the adjusted net assets valuation method in determining the market value of an entity's shares we will start from the assets and liabilities of a company, as revealed by its balance sheet. We will also use additional information arise from the diagnostic analysis of the company's activity. The company is acting in the production sector and its capital is divided into 36.000 ordinary shares with a book value of 15 lei each and an intrinsic value of 21.28 lei per share.

3.1. Valuation of non-current assets

According to its financial statements the company has non-current assets of 1.377.258 lei, divided into three categories: intangible assets of 29.152 lei, fixed assets of 1.343.106 lei and long-term investments of 1.292 lei. For each type of assets we need to apply specific valuation methods in order to transform the balance-sheet value, which is an accounting value, into its market value.

The intangible assets are composed of development expenditures of 4.720 lei, intellectual property rights of 1.512 lei and advances and intangible assets in progress of 22.920 lei. The development expenditures cannot be identified by project therefore their value needs to be eliminated form calculation; while the other intangible assets will remain at their balance-sheet value.

In the fixed assets category the company reports lands of 31.214 lei, buildings at a net accounting value of 500.040 lei, machinery and equipment at a net accounting value of 809.416 lei, other fixed assets of 2.088 lei and advances and fixed assets in progress of 348 lei.

The company owns a surface of 5.000 square meters of land at an accounting value of 6,2428 lei/m^2. The market value of the land was estimated using a market comparison valuation method at 6,6148 lei/m^2, thus resulting a 1.860 lei increase of value to 33.074 lei.

The building owned by the company is used for operating purposes, is relatively new, being raised two years ago. It will be valuated based on the net replacement cost method. The method consists in first determining the gross replacement cost based on the costs necessary for building a new construction with the same characteristics as the analyzed one and afterwards taking into consideration the depreciation of the existing building.

For the company's building the gross replacement cost is estimated at 504.000 lei. The building is not physically depreciated thus the only depreciation that needs to be taken under account is the external one that arises from factors such as location or local market conditions. By comparing the market transactions of similar real estate's we conclude that the value of the building is not influenced by external depreciation, but rather an appreciation of value estimated at 50% of its gross replacement cost.

Therefore the net replacement value of the building will be: 504.000 lei x (1+0.5) = 756.000 lei, which leads to a necessary correction of plus 255.960 lei.

The machinery and equipment consists of a technical assembly line bought two years ago at a price of 879.800 lei with a useful life of 25 years and an output of 1.500 units/day. It will also be valuated using the net replacement cost method.

The gross replacement cost is estimated based on the market price of similar equipment at the valuation date. The cost of a new equipment is established at 1.250.000 lei but its production capacity is of 2.000 units/day and the cost-capacity factor (an indicator showing the link between the cost and the output of a machinery) is 0.6. The gross replacement cost of the equipment is calculated using the cost-capacity method as follows:

$$\frac{C_2}{C_1} = \left(\frac{Q_2}{Q_1}\right)^{cost-capacity\ factor} \quad (1)$$

where:

C_2 – the unknown cost of the existing equipment that has a production output of Q_2;

C_1 – the market price of a similar equipment that has a production output of Q_1

$$\frac{C_2}{1.250.000} = \left(\frac{1.500}{2.000}\right)^{0,6} (2)$$

C_2 = 1.250.000 lei x 0,841466 = 1.051.832 lei – gross replacement cost (3)

The depreciation taken under account is composed of a physical and functional depreciation estimated based on the age, the technical condition and the usage degree. Since the asset has a useful life of 25 years of which two years have passed, the gross replacement cost will be adjusted by applying a 92% correction (23 years/25 years).

The market value of the machinery and equipment is so established at 967.685 lei, imposing a positive correction of 158.269 lei.

The other fixed assets, consisting of office furniture, are relatively new and therefore no value correction is necessary.

The long-term investments consist of 1.000 ordinary shares issued by another company at a nominal value of 5 lei/share, representing 8% of its equity. The dividend per share estimated for the next year is 6 lei in and the constant dividend growth rate is 3%. The required rate of return for companies with similar risk and return characteristics is 17%. The issuing company is not listed on the capital market but is making the necessary steps towards quotation in the next year. The usual discounts for such entities are between 5 and 10%.

Since the issuing company is not listed on the capital market, the calculation of the shares' value will be performed using the Gordon-Shapiro model also known as the Dividend Discount Model. The value of the stock will be:

$$P = \frac{D_1}{k-g} = \frac{6\ lei}{(0.17-0.03)} = 42.85\ lei \quad (4)$$

where:
P – price of the valuated share;
D_1 – next year's expected dividend;
k – required rate of return;
g – constant dividend growth rate;

Because the issuing company is not listed on the capital market a discount for the lack of liquidity needs to be applied to that value. Since the company intends to list it's shares in the near futures we will use the minimum discount of 5%. So, the market value of one share will become 40,7 lei and the total value of shares owned by the valuated company will be 40.700 lei.

The corrections made to the accounting value of non-current assets and their market value are summarized in table 1.

Table 1. The valuation of non-current assets using the adjusted net assets method

	Accounting value	**Corrections**	**Market value**
I. Intangible assets	**29.152**		**24.432**
I.1. Development expenditures	4.720	(4.720)	0
I.2. Intellectual property	1.512	0	1.512
I.3. Advances and intangible assets in progress	22.920	0	22.920
II. Fixed assets	**1.343.106**		**1.759.195**
II.1. Land	31.214	1.860	33.074
II.2 Buildings	500.040	255.960	756.000
II.3. Machinery and Equipment	809.416	158.269	967.685
II.4. Other fixed assets	2.088	0	2.088
II.5. Advances and fixed assets in progress	348	0	348
III. Long-term investments	**5.000**	**35.700**	**40.700**
Non-current assets – total	**1.377.258**	**447.069**	**1.824.327**

Source: own processing based on the balance-sheet

3.2. Valuation of current assets

The company's current assets have a total value of 816.914 lei and are represented by inventory of 343.966 lei, receivables of 417.300 lei and cash and cash equivalents of 55.648 lei.

The raw materials inventory is valuated in the balance-sheet using the LIFO method, which leads to their undervaluation. Therefore, we will reevaluate the raw materials inventory using the FIFO method and increase their value with 4.025 lei.

In the finished goods category a number of 30 products have manufacturing defects and their total value of 3.000 lei will be deducted for calculation.

The trade receivables of the company include uncollectable debts of 105.073 lei, for which no provisions have been made. Therefore a negative correction of trade receivables to a market value of 273.021 lei is necessary.

After analyzing the balance-sheet and the other information, we conclude that no other correction of value is needed and the market value of current assets is as follows (table 2):

Table 2. The valuation of current assets using the adjusted net assets method

	Accounting value	**Corrections**	**Market value**
I. Inventory	**343.962**		**344.987**
I.1. Raw materials	170.988	4.025	175.013
I.2. Work in process	20.010	0	20.010
I.3. Finished goods and merchandises	147.000	(3.000)	144.000
I.4. Advance payments on future purchases	5.964	0	5.964
II. Receivables	**417.300**		**312.227**
II.1. Trade receivables	378.094	(105.073)	273.021
II.2. Other receivables	39.206	0	39.206
III. Cash and cash equivalents	**55.648**	**0**	**55.648**

Current assets - total	**816.910**	**(104.048)**	**712.862**

Source: own processing based on the balance-sheet

Before moving forward to the valuation of liabilities we also note the existence in the balance sheet of prepaid expenses of 2.914 lei that need to be eliminated form calculation.

3.3. Valuation of liabilities

At the date of the valuation, the company reports liabilities of 1.430.982 lei consisting of commercial liabilities, a long-term credit and other liabilities.

Since the company shows a risk of non-collecting it's receivables a provision for risks and expenses needs to be created. By analyzing the rate of non-collection in the past year we estimate that the value of this provision is 113.428 lei.

Also, the tax expenses for the fictitious plus value of assets is calculated at a rate of 16%, generating a value of 72.930 lei, which will be included in the reevaluated liabilities.

No other corrections in the value of liabilities are necessary therefore the market value of liabilities is as follows (table 3):

Table 3. The valuation of liabilities using the adjusted net assets method

	Accounting value	**Corrections**	**Market value**
Long-term credit	715.491	0	715.491
Commercial liabilities	572.393	0	572.393
Other liabilities	143.098	0	143.098
Provision for risks and expenses	0	113.428	113.428
Tax expenses for the plus value of assets	0	72.930	72.930
Liabilities - total	**1.430.982**	**186.358**	**1.617.340**

Source: own processing based on the balance-sheet

3.4. The adjusted net assets value calculation

After reevaluating all assets and liabilities in order to determine their market value, the adjusted net assets value can be calculated. To do that we will use the subtractive method that uses the following formula:

Adjusted net assets = Total corrected assets – Total corrected liabilities (5)

By summarizing the results previously obtained we get the following values (table 4):

Table 4. Calculation of adjusted net assets value

	Accounting value	**Corrections**	**Market value**
Non-current assets	1.377.258	447.069	1.824.327
Current assets	816.910	(104.048)	712.862
Prepaid expenses	2.914	(2.914)	0
Total assets	**2.197.082**	**340.107**	**2.537.189**
Total liabilities	**1.430.982**	**186.358**	**1.617.340**
Book value	766.100		
Adjusted net assets			**919.849**
Number of issued shares	36.000		
Intrinsic value of shares	21.28		
Market value of shares			**25.55**

Source: own processing based on the balance-sheet

The market value of shares provided by the adjusted net assets valuation method can only constitute a starting point to determine the price at which the company's shares can be traded. It is an economical value, far more meaningful for an investor than the book value which is influenced by accounting rules and policies.

4. Conclusions

The adjusted net assets valuation method provides a solid estimate of the market value of a company. The asset-by-asset approach used in valuation allows for the valuator to take under consideration all factors influencing the individual value of each component of the company's patrimony. It can be argued that it is not a valuation method in itself, but rather a collection of valuation methods.

One critical aspect of the method is its incapacity to reflect the future outcome of the company's activity. It can only show a "picture" of how the company's market value looks like at valuation date. Any changes in the value influencing factors or simply the passing of time leads to the need to reevaluate the entity's assets and liabilities. Also, any investor that needs to valuate a business will be preoccupied by its' capacity to produce outcomes and not only by the value of its net assets. Therefore, when used to valuate a company, the adjusted net assets method needs to be doubled by another valuation method capable to generate forecasts of the company's activity, such as an income-based method.

5. References

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