HOW THE DEPRECIATION METHOD CONTRIBUTES TO ESTIMATING FUTURE TREASURY FLOWS OUT OF THE ASSETS USE – CASE STUDY IN THE GROUPS OF SOCIETIES FROM THE ROMANIAN AREA

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The current paper further pursues a previous research which sets out to test the contribution of the amortization method to generating the future cash flows from using tangible fixed assets within the European and Romania area. The process was initiated out of the necessity to identify new working tools available for the Romanian accountant professionals with regard to implementing the provisions of the accounting international standards (IFRS) and it came across the difficulty of modeling the sample – 40 societies – and collecting information from financial situations, often incomplete, insufficiently formalized and difficult to process.

Keywords: cash flow, discount rate, international accounting, prognosis interval.

JEL classification: M41

1. Introduction

Harmonizing the Romanian accounting with the IFRS provisions and with the current European Directives has led to the increasing abandoning of the traditional system and the orientation of the practitioners towards a creative accounting, whose main object is an in depth research and analysis of the future in order to be able to transpose it into financial situations. Within this context [1,Manea M., IABE 2012], the objective of our research is the modeling of the future cash flows from the use of the fixed assets starting from the amortization measure of the concerned assets, having identified a similar kind of mathematical model in a precedent study. Knowing that, in practice, the estimation of future cash flows depends on the entity's policy regarding the owned assets, their use, as well as the incidence of various external factors which can make the net cash flows to differ in their development from the model presented by us, its testing in practice was utterly necessary.

The testing was first carried out on the societies within the European area, therefore the present material's gradual approach is to validate the mathematical model in the Romanian area. Although we came across several difficulties in testing as a consequence of the precarious information identified within the set of financial situations published annually by the Romanian entities, the process must be further pursued with a view to validate the mathematical model suggested.

2. Literature review

Although the international norm IAS 36 "Asset depreciation" prescribes the treatment applicable to estimating the cash flows from the use of tangible assets, allotting an ample space to the process of modeling this aggregate – paragraphs 39-52 from the norm, however the route provided by the international regulation constitutes in another challenge for the Romanian accountant professionals. This is the consequence of information insufficiency on the market, or even the lack of conditions of a perfect market in the current Romanian area; moreover, since the Romanian practitioners are not familiarized with this approach that is specific to the international accounting, implicitly with the subjectivity of estimations in the cash flows' modeling, treat the problem superficially, with implications in the unfavorable ending of our initiative. Under these circumstances [2, Manea M., IABE 2012], in modeling the respective flows one usually also resorts to the professional assessors' contribution. We are talking about those professionals (ANEVAR 2004, EBM 101 Module – Approaches in assessing movable property, I-38) that have information from reliable and pertinent markets obtained from different sources, such as: a) parties in the transaction (owners/managers); b) offers from the producers, repair and maintenance firms; c) data bases on the internet; d) data bases of auction sales; e) published ads (specialty); f) control and certification institutions in specific areas; g) the data bases of specialized firms; h) its own data base; i) statistics, forecasts in the field; j) various free publications for new and used equipment; k) professional associations, etc.

The sources of information mentioned above constitute a detailed documentation which allows analysis at any subsequent date. However, Romanian societies, especially under the circumstances of the economic crisis, cannot afford to resort to the professional assessors' services for reliable and pertinent estimation of the future cash flows from the use of assets due to high consultancy rates. Therefore, our attempt to measure the future cash flows from the use of fixed assets through the proposed mathematical model supports the Romanian practitioners to quantify this aggregate without the professional assessors' contribution and influence.

3. Methodology

3.1. The context and the objectives of the research

Figures, numbers, operations and mathematical reasoning [3, Jianu I., 2012] are not today, as they have never been episodic appearances in the accounting practice and theory. From *Summa di Aritmetica, Proportioni et Proportionalita of Luca di Pacioli* to the contents of IFRSs, there are enough similarities between mathematics and accounting. Between depreciation methods that address current cash flow in terms of operations, understanding the asset as an investment where its use is expected to recover capital, the American method [4, Langot J.] deserves a closer scrutiny especially the *implicit interest depreciation method*. According to this method, the depreciation is considered spread between two present values (use) consecutive surveyed (*t-1* time, and *t* time) is regarded as the present value sum of future cash flows from operations to date.

The investor expects a certain return on invested capital on fixed assets that the rate of return. To express the depreciation as the difference between two consecutive values present rate of return method considers the rate of return to the asset as being similar to the discount rate to future cash flows. Just as the present value of future cash flows from operating at the acquisition date may be equal to the cost of that asset. Depreciation, the difference of two consecutive use values, is obtained by deducting the estimated cash flow due to investor compensation. Measure cash flow method is considered each year is given by the formula:

$$\text{CF} = \frac{Cxr}{1-(1+r)^{-n}} \quad \text{where,}$$

CF - cash flow annually
C - the original cost of the asset
r - discount rate,
n - the life of the asset

We illustrate the model considering the following example: Entity X has a fixed asset purchased at beginning of the year at a cost of 2,700 RON, the estimated residual value at the acquisition date 200 RON. The life of the asset is 5 years, the investor required rate of return equals the discount rate to future cash flows from use is 5%. It also considers the value of the asset at the time of purchase equal to its cost. Using the above formula at a discount rate of 5% and a useful life of five years, cash flows used amounts to 623,64 RON annually, as follows:

$$\text{CF} = \frac{2.700x5\%}{1-(1+0{,}05)^{-5}} = \frac{135}{0{,}21647} = 523{,}64 \text{ RON}$$

Size of annual amortization that present developments in the asset value and investor compensation payable are set out in the table below:

Years (1)	Given value at the beginning of the year (2)	Future cash flows (3)	Investor compensantion (4) = (2) x 5%	Annual amortization (5) = (3) – (4)
1	2.700	623,64	135,00	488,64
2	2.211,36	623,64	110,57	513,07
3	1.698,29	623,64	84,91	538,73
4	1.159,56	623,64	57,98	565,66
5	593,90	623,64	29,69	593,95

It is noted that the annual depreciation amount is increasing annually by 5%, while cash flows currently used remain constant. In practice cash flows of use cannot remain steady, but they usually decrease from one year to another due to the fact that, as they are being used, the company´s utility assets decreases, so that at a T moment value of future cash-flows is zero.

Desiring to implement, within the Romanian area specific tools for creative accounting, we asked ourselves whether, starting from a certain set of rules regarding amortization and following the considerations of the American *implicit interest depreciation method,* we can obtain a model through which the net cash flow from exploiting an asset can be expressed depending on the measure of the annual amortization.

Following the desired objective, our research started in the opposite direction of the American model, that is, regarding as valid a certain set of rules concerning amortization, we tried to quantify the measure of the future cash flows from utilization.

In our approach [5, Manea M., IABE 2012], we sustain the following considerations, namely:

- ✓ the asset is view from the investor´s perspective that expects a remuneration of capital invested;
- ✓ asset is recognized in the financial statements present value less residual value, just as depreciable basis will be equal to the amount of use;
- ✓ use value as the sum of present value of future cash-flows at the acquisition date asset is equal to its cost;
- ✓ rate of remuneration of capital invested is similar to the discount rate to future cash flows;
- ✓ annual depreciation is considered as decreasing the amount of use of property between two moments't-1 or t.

Our action [6, Manea M., IABE 2011], identified the following mathematical model:

$$CF_t = A_t + r \sum_{i=t-1}^{T} A_i \quad , \quad \text{where}$$

CF_t - the net cash flow from using the asset in the year t,

r - the discount rate of future treasury flows,

A_t - the afferent amortization of the year t.

After testing the model in the European area – on a sample of 47 societies within the domain of transportation, logistics, durable development and industry, the current paper will focus on validating the model within the Romania area as well. In the following, we will present the chosen sample of Romanian societies, the method used in modeling the future cash flows from the use of fixed tangible assets held by societies, as well as the obtained results.

3.2 The sample

The sample constitutes of 40 societies within the Romanian area, following the same domain of transportation, logistics, durable development and industry analyzed in testing the mathematical model at a European level. The testing was carried out on a prognosis interval of five years 2008 - 2012; the information was gathered from the financial situations annually published by the analyzed societies, rated at the Bucharest Stock Exchange. We think it necessary that the testing interval of the mathematical model be extended to five years instead of three in the European area, as a consequence of the subjectivity of the gathered data, but especially as a consequence of their inconsistency from one year to another within the annual set of financial situations. The reason behind selecting the interval of five years was the necessity to estimate as accurately as possible the discount rate, which is difficult to model in the Romanian area, but also for a valid comparison with the testing results of the same model in the European space.

3.3 The method

The initial goal, in the European area, was to test the mathematical model on an individual fixed assets sample, but, as a consequence of the difficult modeling of the cash flow for every fixed asset individually, we chose to test the model for groups of fixed assets.

Subsequently, a similar procedure was used in the Romanian area, aiming at consistency in implementing the procedures. From the financial situations published annually by the analyzed traded societies, was gathered information such as: annual amortization afferent to the asset group subjected to analysis, their cumulated amortization, respectively the discount rate.

The first two indicators did not raise modeling problems, since they were easy to identify and measure; however, for the discount rate, the information was insufficient, therefore we proceeded to using a prognosis interval. We must note that, in calculating the cash flow, we used the superior limit of the discount rate. In the following we will present a few in-extenso models to calculate the cash flow at the level of the analyzed Romanian societies.

Table no. 1 Extract from calculated the cash-flow to AVIOANE S.A. CRAIOVA

SPECIFICATION	2012	2011	2010	2009	2008
Annual amortization	1.509.128	703.540	774.983	874.626	918.432
Cumulated amortization	9.449.843	7.948.564	10.520.168	9.753.359	9.042.698
Updated rate	14,7%	14,2%	7,8%	10,3%	10,3%
Calculated CF	2.898.255	1.832.236	1.595.556	1.879.222	1.849.830
Financial Situation CF	2.709.128	1.931.224	1.480.156	(4.259.852)	2.235.266

Source: Author's Projection

CF (2012) = 1.509.128 + 14,7% x 9.449.843 = 2.898.255
CF (2011) = 703.540 + 14,2% x 7.948.564 = 1.832.236
CF (2010) = 774.983 + 7,8% x 10.520.168 = 1.595.556
CF (2009) = 874.626 + 10,3% x 9.753.359 = 1.879.222
CF (2008) = 918.432 + 10,3% x 9.042.698 = 1.849.830

Table no. 2 Extract from calculated the cash-flow to S.C. IAR BRAŞOV

SPECIFICATION	2012	2011	2010	2009	2008
Annual amortization	2.586.100	1.010.865	1.179.207	1.234.184	1.239.616
Cumulated amortization	30.061.816	22.538.951	21.595.174	20.455.160	19.398.298
Updated rate	14,7%	14,2%	13,8%	10,3%	10,3%
Calculated CF	7.005.187	4.211.396	4.159.341	3.341.065	3.237.641
Financial Situation CF	7.455.675	4.516.231	4.030.100	(4.013.550)	(4.035.764)

Source: Author's Projection

CF (2012) = 2.586.100 + 14,7% x 30.061.816 = 7.005.187
CF (2011) = 1.010.865 + 14,2% x 22.538.951 = 4.211.396
CF (2010) = 1.179.207 + 13,8% x 21.595.174 = 4.159.341
CF (2009) = 1.234.184 +10,3% x 20.455.160 = 3.341.065
CF (2008) = 1.239.616 + 10,3% x 19.398.298 = 3.237.641

Table no. 3 Extract from calculated the cash-flow to AEROSTAR S.A. BACĂU

SPECIFICATION	2012	2011	2010	2009	2008
Annual amortization	7.489.000	7.602.658	7.217.372	6.049.489,0	6.612.618,0
Cumulated amortization	34.101.100	27.974.495	21.207.809	19.754.265	24.228.829
Updated rate	18,7%	14,2%	19,8%	19,3%	10,3%
Calculated CF	13.865.906	11.575.036	11.416.518	9.862.062	9.108.187
Financial Situation CF	14.129.000	19.229.380	12.348.743	10.617.402	24.717.737

Source: Author's Projection

CF (2012) = 7.489.000 + 18,7% x 34.101.100 = 13.865.906
CF (2011) = 7.602.658 + 14,2% x 27.974.495 = 11.575.036
CF (2010) = 7.217.372 + 19,8% x 21.207.809 = 11.416.518
CF (2009) = 6.049.489,0 +19,3% x 19.754.265 = 9.862.062
CF (2008) = 6.612.618,0 + 10,3% x 24.228.829 = 9.108.187

For calculating the cash flow, each of the three structures: annual amortization, cumulated amortization and discount rate had a significant influence. Upon modeling the discount rate, several problems arose in the Romanian area. Therefore, as a consequence of imperfect markets, we could not identify a fixed discount rate for the analyzed entities. In the cases where the discount rate varied for the interval 2008 - 2012, we proceeded to establishing a range of values between a minimum limit and a maximum one.

Whilst calculating the cash flow we have used the maximum limit of the encountered discount rate. We find it necessary to present the discount rate's range of values at each society's level, influencing both the results and their interpretation.

Table no. 4 Discount rate

Specification	2012	2011	2010	2009	2008
Aerostar S.A. Bacău	11%-18,7%	9%-14,2%	12%-19,8%	14%-19,3%	7%-10,3%
Aviatia Utilitară Buc.	9%-14,7%	9%-14,2%	9%-13,8%	7%-10,3%	7%-10,3%
Avioane S.A. Craiova	9%-14,7%	9%-14,2%	5%-7,8%	6%-10,3%	6%-10,3%
Constr. Aeronautice S.A.	9%-14,7%	9%-14,2%	7%-13,8%	7%-10,3%	7%-10,3%
IAR S.A. Brașov	9%-14,7%	9%-14,2%	10%-13,8%	8%-10,3%	8%-10,3%
Constr. Ferov. Craiova SA	7%-10,7%	7%-10,2%	7%-9,8%	5%-8,7%	5%-7,3%
Reva S.A.	7%-10,7%	7%-10,2%	7%-9,8%	5%-8,7%	5%-7,3%
Roman S.A. Brașov	7%-10,7%	7%-10,2%	7%-9,8%	5%-8,7%	5%-7,3%
SMR S.A. Balș	7%-10,7%	7%-10,2%	7%-9,8%	5%-8,7%	5%-7,3%
Coremar S.A. Constanta	7%-10,7%	7%-10,2%	7%-9,8%	5%-8,7%	5%-7,3%
Expl. Port. Drobeta S.A.	7%-10,7%	7%-10,2%	7%-9,8%	5%-8,7%	5%-7,3%
Giurgiu Port S.A.	7%-10,7%	7%-10,2%	7%-9,8%	5%-8,7%	5%-7,3%
Hercules S.A. Brăila	7%-10,7%	7%-10,2%	7%-9,8%	5%-8,7%	5%-7,3%
Șant. Naval Mangalia S.A.	7%-10,7%	7%-10,2%	7%-9,8%	5%-8,7%	5%-7,3%
Șant. Naval Orșova S.A.	7%-10,7%	7%-10,2%	7%-9,8%	5%-8,7%	5%-7,3%
Severnav S.A.	7%-10,7%	7%-10,2%	7%-9,8%	5%-8,7%	5%-7,3%
Allegro Maxi Taxi S.A.	1%-1,7%	1%-1,7%	1%-1,3%	5%-7,4%	5%-6,1%
Atlas S.A. Galati	1%-1,7%	1,2%-2,8%	1%-1,7%	1%-1,4%	1,4%-3,1%
Bîrzava S.A.	2%-4,7%	2%-4,2%	1,3%-3,9%	13%-17,6%	13%-17,4%
Comautosport S.A.	15%-18,7%	3%-8,7%	15%-18,7%	5%-7,7%	1%-1,9%
Comet S.A. Voluntari	1%-3,6%	1%-3,1%	1%-2,9%	1%-2,4%	1%-1,8%
Comtrans S.A. Constanta	1%-3,7%	1%-3,6%	1%-3,1%	1%-2,9%	1%-2,4%
Saturn S.A. București	1%-3,9%	1%-4,9%	1%-3,1%	1%-2,7%	1%-2,8%
Simec S.A. Sibiu	1,5%-4,5%	2%-4,4%	2%-4,1%	1%-3,9%	1%-3,4%
Tara S.A. Pitești	2,2%-4,1%	1%-3,7%	1%-3,5%	1%-3,4%	1%-3,2%
Taxi Service S.A. Titan	1,4%-4,7%	1,3%-4,4%	1%-3,7%	1%-3,8%	1%-3,5%
Trameco S.A. Oradea	2%-4,5%	2%-4,4%	1,8%-4,1%	1,2%-3,9%	1,3%-3,4%
Trans Sălaj S.A.	2%-4,9%	1,9%-4,8%	1,5%-3,9%	1,2%-3,5%	1%-2,4%
Transcom S.A. București	1,3%-3,8%	1,3%-3,6%	1%-2,1%	1%-2,9%	1%-2,7%
Transcom S.A. Sibiu	1%-1,8%	2,1%-6,9%	1%-2,8%	1%-2,9%	1%-2,7%
Transil S.A. Slobozia	2,1%-4,8%	2,1%-4,6%	1,4%-3,9%	1,9%-4,3%	1,9%-4,2%
Transmixt Moldova S.A.	1,7%-3,8%	1,7%-3,6%	1%-2,1%	1%-2,9%	1%-2,7%
Autonova S.A. Satu-Mare	2,1%-4,9%	2,1%-4,9%	2,1%-4,6%	2,1%-4,5%	2,1%-4,1%
Baza Ateliere și Transport Arad S.A.	2,2%-4,1%	1,9%-3,8%	1,9%-3,7%	1,7%-3,4%	1,7%-3,3%
C. Reparat Motoare Luduș	1,2%-3,7%	2%-4,9%	1,4%-3,2%	1,3%-2,9%	1,2%-2,6%
CIT S.A. Craiova	1,2%-3,7%	1,3%-3,3%	1,3%-3,1%	1%-2,9%	1%-2,6%
Comp. Auto Topoloveni	2%-4,7%	2%-4,2%	1,3%-3,8%	1,2%-3,9%	1,2%-3,6%
Farex S.A. Brăila	2%-4,7%	1%-2,4%	1%-2,1%	1%-1,9%	1%-1,6%
Remar S.A.	2,3%-5,7%	2,3%-5,2%	2%-4,9%	2%-4,5%	1,5%-3,6%

4. Results

Specificatie	Cash-flow 2012		Cash-flow 2011		Cash-flow 2010		Cash-flow 2009		Cash-flow 2008	
	realized	model	realized	model	realized	model	realized	model	realized	model
Aerostar S.A. Bacău	14.129.000	13.865.906	19.229.380	11.575.036	12.348.743	11.416.518	10.617.402	9.862.062	24.717.737	9.108.187
Aviatia Utilitară Buc.	413.565	704.009	695.684	672.410	798.249	740.002	355.112	367.816	-	-
Avioane S.A. Craiova	2.709.128	2.898.255	1.931.224	1.832.236	1.480.156	1.595.556	(4.259.852)	1.879.222	2.235.266	1.849.830
Constr. Aeronautice S.A.	16.014	34.164	-	-	-	-	-	-	-	-
IAR S.A. Braşov	7.455.675	7.005.187	4.516.231	4.211.396	4.030.100	4.159.341	(4.013.550)	3.341.065	(4.035.764)	3.237.641
Constr. Ferov. Craiova SA	620.014	616.382	909.614	899.179	(304.987)	1.171.172	1.665.841	1.252.682	(2.874.230)	486.622
Reva S.A.	5.987.493	5.014.070	6.482.040	4.591.114	5.499.927	3.453.077	3.063.169	3.309405	1.270.667	1.217.974
Roman S.A. Braşov	3.512.346	3.402.403	3.889.700	3.758.082	20.152.102	19.060.118	(6.565.425)	6.904.813	(20.729.876)	6.770.461
SMR S.A. Balş	6.766.521	6.652.037	5.346.636	5.270.366	5.295.473	5.441.782	4.354.245	4.722.389	(6.037.352)	3.878.145
Coremar S.A. Constanta	1.651.136	1.558.022	1.326.951	1.292.683	1.015.976	1.113.626	710.144	707.638	781.179	219.978
Expl. Port. Drobeta S.A.	1.001.255	951.473	1.343.111	1.234.957	917.100	863.549	843.988	820.298	231.444	687.787
Giurgiu Port S.A.	7.939.019	7.736.707	7.647.173	873.664	709.199	802.897	800.765	811.875	830.997	857.952
Hercules S.A. Brăila	6.974.820	2.940.837	8.472.050	2.433.648	10.717.310	2.462.281	2.110.403	2.219.414	1.650.000	1.946.408
Şant. Naval Mangalia S.A.	(9.404.808)	62.833	(8.914.278)	58.229	(2.164.629)	46.688	(1.214.067)	47.962	(494.465)	46.749
Şant. Naval Orşova S.A.	-	-	-	-	17.937.671	17.140.037	11.982.580	11.856.847	13.634.413	13.143.748
Severnav S.A.	3.680.015	3.175.415	5.538.291	5.648.633	6.749.186	6.542.669	(8.765.398)	6.597.763	10.193.011	5.484.957
Allegro Maxi Taxi S.A.	(368.396)	377.126	(350.798)	735.230	1.100.111	1.191.640	951.035	1.638.331	589.818	1.570.412
Atlas S.A. Galati	6.376.974	5.635.759	54.544	3.260.738	2.200.985	2.801.591	1.880.818	2.309.970	3.345.566	3.328.990
Bîrzava S.A.	52.669	52.568	61.250	61.038	(14.707)	78.565	80.089	79.634	101.577	101.397
Comautosport S.A.	161.407	63.794	(72.251)	57.307	67.477	66.950	120.300	121.224	111.210	112.667
Comet S.A. Voluntari	(33.067)	9.207	(46.795)	11.844	(785.925)	328.294	-	-	-	-
Comtrans S.A. Constanta	134.235	147.777	98.069	101.898	561.622	84.504	546.300	81.634	145.633	85.220
Saturn S.A. Bucureşti	63.706	419.367	476.303	438.551	182.061	418.093	198.000	340.987	148.000	290.807
Simec S.A. Sibiu	-	-	81.443	471.310	216.881	394.396	282.671	620.291	271.580	561.757
Tara S.A. Piteşti	85.119	86.243	95.654	96.389	141.345	142.114	93.112	99.385	85.789	89.804
Taxi Service S.A. Titan	728.330	729.141	227.965	228.322	301.678	302.684	614.877	635.091	1.014.788	1.023.863
Trameco S.A. Oradea	(1.183.633)	5.301.406	(3.436.648)	3.867.759	(2.107.889)	3.827.324	(1.786.111)	3.064.376	(1.460.648)	2.959.977
Trans Sălaj S.A.	84.112	85.491	103.980	104.327	141.222	142.788	170.110	196.278	105.677	123.763
Transcom S.A. Bucureşti	98.200	119.400	(60.342)	189.510	119.009	192.792	143.112	182.703	92.010	142.642
Transcom S.A. Sibiu	227.210	226.750	230.352	220.046	3.684	141.993	4.562	74.079	3.978	92.269
Transil S.A. Slobozia	50.909	51.894	49.440	50.401	48.710	45.866	22.400	30.757	12.112	19.994
Transmixt Moldova S.A.	101.114	436.574	82.956	301.403	78.100	142.300	(2.155)	118.028	(12.837	146.093
Autonova S.A. Satu-Mare	2.075.990	2.007.791	3.849.614	1.871.149	(2.711.877)	1.354.443	1.349.526	1.170.649	1.124.479	1.225.387
Baza Ateliere şi Transport Arad S.A.	7.112.462	233.254	(348.161)	308.596	2.400.799	305.047	(9.312.012	413.334	(3.385.084	365.270
Centrul Reparat Moatoare Luduş	(3.726)	2.223	5.820	2.643	1.283	1.894	-	-	-	-
CIT S.A. Craiova	1.106	56.259	(5.487)	72.821	(47.642)	73.290	(141.957)	78.772	(425.176)	61.245
Comp. Auto Topoloveni	4.952.123	3.293.063	(760.612)	2.965.524	(75.420)	2.752.417	1.194.071	2.686.298	2.412.843	2.536.296
Farex S.A. Brăila	-	-	18.525	153.506	61.231	174.268	222.673	222.262	(248.703)	318.074
Remar S.A.	28.375.305	6.343.366	24.744.963	4.621.527	16.835.022	4.162.358	9.373.326	2.403.905	(15.965.432)	2.923.419

5. Results interpretation

Within the sample of Romanian societies that was subjected to analysis, for calculating the cash flow, the following limitations/malfunctioning were recorded while implementing the model suggested by us:

✓ the professional accountant used a discount rate placed on a range of values between a minimum limit and a maximum one, since the reality captured from the set of financial situations published annually by the entities has identified an acute lack of information connected to modeling the discount rate within the Romanian area. In comparison with the European area, where there could be identified at the level of each society fixed discount rates, it was noted that Romanian societies are not preoccupied by the initiative of modeling the discount rate, since the information taken from the financial annual situations are lapidary enough. In this context, the analyst found himself in the situation of opting for the use of the maximum limit of the discount rate, which led to a dilution of the obtained results;

✓ the countless estimations regarding the discount rate which the analyst was compelled to frame between a minimum limit and a maximum one, as well as the possibility of selecting the superior value of the rate in the calculation of the cash flow, led to results that were considerably modified as opposed to the value that could have been registered using a fixed discount rate; from this perspective, we consider that the comparison between the results obtained in the European area – where we identified a fixed discount rate in implementing the suggested mathematical problem – and the ones from the Romanian area, where we used a discount rate between a minimum limit and a maximum one, was a little far-fetched. However, the initiative must be continued in order to validate our suggested model.

✓ out of the 40 analyzed Romanian societies, we note the lack of unity in presenting the annual financial situations, with information that was insufficiently formalized and reduced comparability, which made more difficult the mission of the analyst in his process of modeling the expected cash flow;

✓ regarding the modeling of the two other aggregates – annual amortization, respectively cumulated amortization, the analyst also encountered difficulties. If the annual amortization was taken from the annex "The Situation of the Fixed Assets", on the other hand, upon identifying the amortization cumulation the information's consistency was pursued, since from one year to another the reported data was different in over 30% of the analyzed entities;

✓ finalizing the action initiated by the professional accountant within the Romanian area met with real difficulties generated by the limitations specific to the autochthonous accounting practices, with discrepancies between the information to report and the one actually presented in the set of annual financial situations; however, it was necessary that the process regarding the validation of the proposed model be continued.

From implementing the mathematical model in the practice of analyzed Romanian societies, the following were noted:

✓ 32,5% out of the analyzed societies (Aerostar S.A. Bacău, Avioane S.A. Craiova, IAR S.A. Brașov, Construcții Feroviare Craiova S.A., Roman S.A. Brașov, SMR S.A. Balș, Coremar S.A. Constanța, Exploatare Portuară Drobeta S.A., Giurgiu Port S.A., Șantierul Naval Orșova S.A., Severnav S.A., Bîrzava S.A., Autonova S.A. Satu-Mare) recorded normal variations of the cash flow between 2008-2012; the cash flows obtained from implementing the model were situated from a value point of view close to the one obtained by the entity and identified from the annual financial situations. Some exceptions were encountered, however, at the level of 2008 and 2009, when the economic crisis and its effect were in full swing and the entities were compelled to rethink their market strategies, drastically reducing their activity. Therefore, an important part of the held fixed assets were unused and, although the amortization for these was registered, they did not contribute to generating the cash flows of the respective groups. This is the reason for the variation registered between the cash flows obtained from activity in contrast to those from implementing the mathematical model;

✓ 7,5% of the cases (Reva S.A., Atlas S.A. Galați, Transcom S.A. Sibiu) the variations of the calculated cash flow compared to the one realized by the entity appeared for three out of the five analyzed years;

✓ other 10% of the analyzed societies (Allegro Maxi Taxi S.A., Comautosport S.A., Componente Auto Topoloveni, Farex S.A. Brăila) obtained an activity cash flow much smaller than the one obtained from implementing the mathematical model – either for the entire period of time that was analyzed, or especially in 2011 and 2012; these variations place under a question mark the model's validity. However, the process must be further pursued in order to carry out the comparison of the information for 2008-2012 and for drawing up conclusions;

✓ for 25% of the subjects (Hercules S.A. Brăila, Șantierul Naval Mangalia S.A., Comet S.A. Voluntari, Trameco S.A. Oradea, Transcom S.A. București, Transmixt Moldova S.A., Baza Ateliere și Transport

Arad S.A., Centrul Reparat Moatoare Luduș, Cit S.A. Craiova, Remar S.A.) the variations between the two cash flows – the one obtained from implementing the mathematical model, respectively the one identified in the set of annually published financial situations – were considerable, as a consequence of our choice of selecting in modeling the cash flow the superior limit of the discount rate;

✓ for other 25% of the subjects (Aviația Utilitară București, Construcții Aeronautice S.A., Comtrans S.A. Constanța, Saturn S.A. București, Simec S.A. Sibiu, Tara S.A. Pitești, Taxi Service S.A. Titan, Trans Sălaj S.A., Transil S.A. Slobozia) the analyst was compelled first to model the "Cash Flow Statement" and only then to perform the interpretations. This course of action was chosen out of the necessity of keeping the representativeness of the sample of analyzed societies.

Although the gathered information from the set of annually published Romanian financial situations was insufficient, therefore the analyst being compelled to remodel certain structures in order to finalize the research, the process materialized into a success which allowed phrasing viable conclusions regarding the validation of the proposed model.

6. Conclusions

The process we initiated out of the desire to make available for the Romanian professional accountant a new working tool for implementing the IFRS provisions in the autochthonous area, can easily be subjected to criticism. We are aware of the limitation of our proposed model, especially under the conditions of an imperfect market which characterizes the Romanian economic space. However, we did not set out to prove how viable the model tested is, but rather to identify the favorable conditions to implementing it in our accounting. Its testing in the practice of groups of societies within the Romanian area has allowed us to identify the degree of compatibility with the cash flows generated from the current activity. Moreover, through comparing the obtained data from testing the model in the two areas – European and Romanian – the validation of the assessed model can or cannot be outlined. We set out to achieve these comparisons and fructify the obtained conclusions in a future paper. In implementing the proposed mathematical model at the level of societies from the Romanian area, the external analyst started from identifying the following structures: annual amortization afferent to the asset group subjected to analysis, cumulated amortization of the analyzed asset group and the appropriate discount rate. If the first two aggregates were easier to identify and raised no significant issues, the discount rate requested consecutive approximations and estimations. From the groups of societies we analyzed, we did not succeed to establish for any of them for the analyzed period of time a fixed discount rate; therefore we turned to an interval fixed between a maximum limit and a minimum one. Our option for the maximum limit of the discount rate generated sufficiently important variations in measuring the cash flows from implementing the model. Of course we also identified situations of cash flow inadequacy – almost 35% of the groups of societies, which, however, did not lead to reject the model. The initial course of action led to the idea that, although there have been differences between the cash flows obtained from using the model and the ones realized by the groups of societies, significant especially in 2009, when the economic recession reached its peak, the proposed model can be implemented in the estimation of the future cash flows from the use of the fixed assets as a consequence of its facile implementation, accessible to the professional accountants that, after gathering the data regarding the amortization from the annual financial situations, respectively for the discount rate available on the market, are able to easily quantify the future cash flows' measure.

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