Comprehensive income under IFRS and its impact on financial performance for Romanian listed entities

RAMONA NEAG, IRINA-DOINA PĂŞCAN, EMA MAŞCA
Financial Accounting Department
"Petru Maior" University
Nicolae Iorga Street, No. 1, Tirgu Mures, Mures
ROMANIA
ramonaneag@yahoo.com, pascanirina@yahoo.com, masca_ema@yahoo.com

Abstract: Romanian listed entities are obliged to apply the IFRS when preparing consolidated financial statements starting with the 2007 accounting period. The change in 2007 in IAS 1 "Presentation of financial statements" stipulates reporting a new indicator of financial performance, the comprehensive income. These changes have been applied since 2009, which entails that, starting with the consolidated financial statements for the year 2009, the financial performance of the Romanian listed entities is measured also by the comprehensive income. Our purpose is to test whether applying the IFRS to the Romanian listed entities, and within these reporting the comprehensive income, contributes to the improvement of information in terms of these entities' financial performance.

Key-Words: financial performance, comprehensive income, net income, IFRS, Romanian listed entities, consolidated financial statements

1 Introduction

The issue in 2005 of a new regulation opens the field for the application of the International Financial Reporting Standards IFRS in Romanian entities. We refer to the Order no. 907 from 2005 for approval of the type of entities to apply the accounting regulations compliant with International Financial Reporting Standards, respectively the accounting regulations harmonized with the European directives. So, "for 2006 financial year, credit institutions must also prepare a set of financial statements in accordance with the International Financial Reporting Standards for information purposes and for users other than the state institutions." [1]

In Romania, the scope of IFRS extends starting with the financial year 2007, with the issue of the Order no. 1121 from 2006, that states in article 1: "Entities whose securities at the balance sheet date are admitted to trading on a regulated market and which prepare consolidated financial statements are required to apply International Financial Reporting Standards from financial year 2007." [2]

Also, beginning with January 1st, 2012, the credit institutions will have to keep the accountancy records according to IFRSs and will publish the individual annual financial statements according to IFRS, in Romanian and national currency. [3]

For all other entities, preparing a set of financial statements in conformity with IFRS is, for the present, optional.

Regarding financial performance reporting, the International Accounting Standard no. 1 (IAS 1) "Presentation of financial statements", revised in September 6th, 2007, requires the presentation of all changes in equity, other than those arising from transactions with owners (named other comprehensive income), either in a single statement - a "Statements of comprehensive income", or in two statements - a separate "Income statement" and "Statement of comprehensive income". The effective date of these changes to IAS 1 was January 1st, 2009, with earlier application permitted.

According to IAS 1, the statement of comprehensive income includes profit or loss from the reporting period, and other comprehensive income, detailed in paragraph 7 as follows:

(a) changes in revaluation surplus (see IAS 16 "Property, Plant and Equipment" and IAS 38 "Intangible Assets");

(b) actuarial gains and losses on defined benefit plans recognised in accordance with paragraph 93A of IAS 19 "Employee Benefits";

(c) gains and losses arising from translating the financial statements of a foreign operation (see IAS21 "The Effects of Changes in Foreign Exchange Rates");

ISBN: 978-1-61804-102-9

(d) gains and losses on remeasuring available-for-sale financial assets (see IAS 39 "Financial Instruments: Recognition and Measurement");
(e) the effective portion of gains and losses on hedging instruments in a cash flow hedge (see IAS 39).
Romanian listed entities compulsorily report the comprehensive income in their consolidated financial statements beginning with January 1st, 2009.
In a previous paper, we analyzed the comprehensive income based on the empirical and theoretical studies published in the accounting literature, and our findings showed that these studies provide mixed evidence on the relevance and usefulness of comprehensive income reporting. [4]
The objective of this research is to test whether applying the IFRS to the Romanian listed entities, and within these reporting the comprehensive income, contributes to the improvement of information in terms of these entities' financial performance.

2 Research hypotheses and methodology

Comprehensive income is considered, by many researchers, a better way for evaluating the financial performance of an entity than net income. The objective of our research is to test whether reporting the comprehensive income by listed Romanian entities contributes to the improvement of information on financial performance.
The hypotheses that we aim to verify can be formulated as follows:
Hypothesis 1: The comprehensive income reported by listed Romanian entities is not a better method for measuring financial performance compared to net income.
Based on the available data and the researched methodology used in this study, the above research hypothesis can be reformulated as:
Hypothesis 2: There are not significant differences between net income and comprehensive income for the entities in this sample.
We have chosen the year 2010 for our research, because this is the last accounting period for which consolidated financial statements are available. Our sample is made up of Romanian entities listed on the Bucharest Stock Exchange, exchange segment BSE, tiers I and II, for which consolidated financial statements are available, for the year 2010, which were prepared in conformity with the international financial reporting standards, as adopted by the European Union. Thus, our sample is made up of 16 entities, including banks.
The consolidated financial statements of the entities in the sample were obtained from the sites of the entities or from the site of the Romanian National Securities Commission www.cnvmr.ro. Based on the consolidated financial statements we have collected data on the net income and comprehensive income attributable to the parent company's shareholders, reported for the 2010 accounting period. We have divided the net income and comprehensive income by the total number of shares issued by each entity at the end of the 2010 accounting period, aiming to allow a better comparison of the performance indicators of the different entities. The objective of earnings per share information is "to provide a measure of the interests of each ordinary share of a parent entity in the performance of the entity over the reporting period". [5] Thus, we have obtained data on the net income per share and comprehensive income per share, which we have used in our study in order to verify the research hypotheses[i]. We have obtained data on the total number of shares from the site of the Bucharest Stock Exchange (www.bvb.ro).

As for the **research methodology**, our scientific approach is predominantly deductive. The research is predominantly quantitative, and the used research methods entail data collection, data processing in order to be interpreted (by calculating the mean, the median, standard deviation, etc.), verifying hypotheses with the significance t-Test in Excel. The research methodology is based on a transversal analysis of the net income and comprehensive income. A similar methodology was used also by Bertoni, M., De Rosa, B. şi Maffei, M. (2007) on a sample of 93 Italian listed entities. [6]

3 Research findings

In the table below, we have presented in percentages the variance between the comprehensive income per share and net income per share, in order to analyze whether the differences between the two indicators of financial performance are significant.

Table 1 Variance between comprehensive income per share and net income per share

Variance (%)	Number of entities	Percentage of entities
< -100%	0	0,00%
between -100% and -	1	6.25%

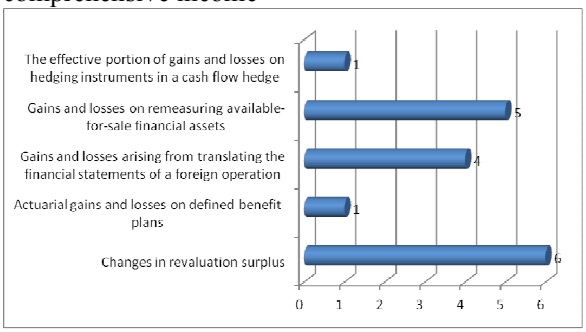
ISBN: 978-1-61804-102-9

25%		
between -25% and 0%	4	25.00%
between 0% and +25%	8	50.00%
between +25% and +100%	2	12.50%
>100%	1	6.25%
Total	**16**	**100.00%**

We can notice in the table above that, in most of the entities (75% of the studied entities), the variance of the comprehensive income per share compared to the net income per share is small, placed in the (-25%; +25%) interval.

Next, we shall present the elements reported by entities in the sample in the category of other comprehensive income.

Fig.1 The frequency of reporting other comprehensive income



We can notice that the most frequently reported components in the category of other comprehensive income are: changes in revaluation surplus (presented in 37.50% of the entities), gains and losses on remeasuring available-for-sale financial assets (in 31.25% of the consolidated financial statements analyzed and in all consolidated financial statements prepared by the banks included in the sample) and gains and losses arising from translating the financial statements of a foreign operation (reported by 25% of the studied entities). Actuarial gains and losses on defined benefit plans and gains and losses on hedging instruments in a cash flow hedge are highlighted only for one entity in the sample.

In order to test if the differences between net income per share and comprehensive income per share are significant, we have carried out a significance test and we have used the t-Test for comparing the means of two paired samples.

Before carrying out the t-Test for comparing the means of two paired samples, we checked if all conditions necessary for the t-Test were fulfilled (the observations in the two samples were dependent or pairs; individuals were randomly chosen from the population and observations were normally distributed).
In order to check if observations are distributed normally, we have analyzed the mean, the median, skewness and kurtosis, in the table below regarding the descriptive statistics of the variables net income per share (NI) and comprehensive income per share (CI).

Table 2 Descriptive statistics

	NI	***CI***
Mean	**0.222276**	**0.250808**
Standard Error	0.127867	0.129908
Median	**0.042144**	**0.043454**
Standard Deviation	0.511469	0.519633
Sample Variance	0.261600	0.270019
Kurtosis	**2.979833**	**1.786913**
Skewness	**1.752359**	**1.440584**
Range	1.952670	1.938028
Minimum	-0.506378	-0.506378
Maximum	1.446292	1.43165
Sum	3.556416	4.012924

From the table presented above we can notice that the mean and median of the two series NI and CI have approximately equal values.
Kurtosis is an indicator used in analyzing the distribution of a data set in order to indicate the degree to which a distribution is flat or peak, and Skewness is an indicator used to analyze the distribution of a data set in order to indicate the deviation of the empirical distribution in relation to a symmetric distribution around the mean. [7] It is advisable that the value of the Kurtosis indicator to be close to 3, and the one of the Skewness indicator to be close to 0. In our study, for the two sets analyzed, Kurtosis has values close to 3, thus we can state that the two sets have a normal distribution.

Using the t-Test we can verify the following hypotheses:
The null hypothesis (H0): The means of the values of net income per share (NI) and comprehensive income per share **do not differ** significantly.
The alternative hypothesis (H1): The means of the net values of net income per share (NI) and

ISBN: 978-1-61804-102-9

comprehensive income per share **differ** significantly.

In order to test these hypotheses, by using the t-Test, we have followed the stages described as follows. In Excel, we have chosen the Data Analysis option from the Tools menu. In the Data Analysis window, we have selected the t-Test for paired samples (t-Test: Paired Two Sample for Means). In the t-Test: Paired Two Sample for Means window we have filled in the following:

- for the "Hypothesized Mean Difference" we have introduced "0", which means we assume that the two means of net income and comprehensive income are equal (according to the null hypothesis – H0);
- for the "Alpha" field, the significance level of the t-Test at 0.05 (implicit level).

The results of the t-Test for comparing the means of two paired samples are presented in the table below.

Table 3 The results of applying the t-Test for paired samples

	NI	*CI*
Mean	0.222276019	0.250807736
Variance	0.261600355	0.27001892
Observations	16	16
Pearson Correlation	0.985855728	
Hypothesized Mean Difference	0	
df	15	
t Stat	-1.31041137	
P(T<=t) one-tail	0.104884057	
t Critical one-tail	1.753050325	
P(T<=t) two-tail	0.209768115	
t Critical two-tail	2.131449536	

The interpretation of results

- We have compared the arithmetic mean of NI 0.222276 with the arithmetic mean of CI 0.250808. The purpose is to show that this difference can be accepted for the entire population, or it is the effect of choosing the sample.
- Pearson correlation (0.985856): the value obtained for the Pearson correlation coefficient is high, close to 1, which indicates a very good correlation between NI and CI, with the interpretation that when NI has low values, CI has low values as well (and obviously, when NI has high values, CI has high values as well).
- Hypothesized Mean Difference: the value with which the difference of the populations' means is compared. As we have aimed to test the equality of means, this implies comparing the difference of the means with 0.
- t Stat is the calculated value of the test statistics (-1.31).
- P(T<=t) one tailed: the one-dimensional critical probability shows what is the probability for a Student variable with df degrees of freedom to exceed the calculated value. In case this value is lower that the significance threshold set, the null hypothesis can be rejected in favor of the alternative hypothesis. In our study, the value of 0.104884 is higher than the significance level of the t-Test (set at 0.05), thus the null hypothesis is accepted (the difference between the two means is not significant).
- t Critical one-tailed: the one-dimensional critical value for the significance threshold $\alpha = 0.05$ (mentioned in the procedure's dialogue). In case the calculated t value is higher than this critical value, the H0 can be rejected. In our study, the t critic one-tailed is of 1.753050. We notice that t Stat (-1.31) < t critic one-tailed (1.75), therefore we cannot reject hypothesis 0. Thus, the NI mean is not significantly different from the CI mean.
- P(T<=t) two-tailed: the bilateral critical probability shows what is the probability for a Student variable with df degrees of freedom to exceed, in absolute value, the calculated value; in other words, the probability that the difference between the means of populations is further from zero than the observed difference. In case this value is lower than the significance threshold set, the null hypothesis can be rejected in favor of the alternative hypothesis of some different means: H1: $\mu 1 \neq \mu 2$. In our case, the indicated value of 0.209768 is higher than the entire α value set (0.05), thus the null hypothesis is accepted.
- t Critical two-tailed: the two-dimensional critical value for the significance threshold $\alpha = 0.05$ (indicated in the procedure's dialogue). In case the calculated t value is higher, in absolute value, than this critical value, then the H0 is rejected. For our study, $| t | = |-1.31| = 1.31 < 2.13$, thus the null hypothesis is accepted.

The results of the t-Test, which we have carried out, determine us to accept the null hypothesis, according to which the means of the net income per share (NI) and comprehensive income per share (CI) values **do not differ** significantly.

ISBN: 978-1-61804-102-9

The difference between NI and CI is not relevant from a statistical point of view, which allows us to state that the research hypotheses (hypothesis 1 and hypothesis 2) are valid. Therefore, *the comprehensive income reported by the Romanian listed entities is not a better measure of financial performance compared to the net income* and *there are no significant differences between the net income and the comprehensive income included in the sample*.

4 Conclusion

Based on the study carried out on a sample of Romanian entities listed on the BSE, we can state that the comprehensive income reported by the Romanian listed companies is not a better measure of financial performance compared to net income.

In our opinion, these results are not at all surprising for the sample studied. How can we explain the fact that there are no significant differences between the net income and comprehensive income reported by the entities included in the sample? The answer can be given by analyzing precisely those elements that represent the difference between comprehensive income and net income; elements called in IAS 1 "other comprehensive income"- OCI. As we can notice from the study carried out, certain elements in OCI are not applicable to the analyzed Romanian entities. We refer here to actuarial gains and losses on defined benefit plans, reported only by an entity in the sample, and the gains and losses on hedging instruments in a cash flow hedge, reported only by an entity in the sample as well. Changes of the surplus from the assets revaluation were reported by the most entities (37.50% of them), but the majority of them did not apply the option of revaluating tangible and intangible assets.

The results of our study show that the application of IFRS and the reporting of comprehensive income at the level of the entities listed on the BSE, in Romania, does not bring more relevant additional information in terms of financial performance.

References:

[1] Ministry of Finance (2005) "Order no. 907 from 2005 for approval of the type of entities to apply the accounting regulations compliant with International Financial Reporting Standards, respectively the accounting regulations harmonized with the European directives", published in the Official Gazette no. 597 on 11 July 2005.

[2] Ministry of Finance (2006) "Order no. 1121 from 2006 regarding the application of the International Financial Reporting Standards", published in the Official Gazette no. 602 on 12 July 2006.

[3] National Bank of Romania (2010) "Order no. 9 from 2010 on the application of International Financial Reporting Standards by credit institutions, as accountancy base and for drawing up the individual annual financial statements starting with 2012 financial year", published in the Official Gazette no. 535 on 30 July 2010.

[4] Păşcan, I., A new measure of financial performance: the comprehensive income - opinions and debates, *Proceedings of the World Multiconference on Applied Economics, Business and Development (AEBD'10)*, vol. 1, 2010, pp. 186-191.

[5] International Accounting Standard no. 33 "Earnings per share".

[6] M. Bertoni, B. De Rosa, M. Maffei, Comprehensive income under IFRS: evidence from a cross-sectional analysis, 3rd EUFIN Workshop on Accounting in Europe, Paris, France: ESSEC - KPMG, 2007, pp. 1-8. *Proceedings of: 3rd Annual Workshop, European Financial Reporting Research Group - Accounting in Europe*, Cergy, France, 12th-13th September 2007. - URL: http://www.essec-kpmg.net/us/eufin/papers.html

[7] Explanations and interpretation Skewness and Kurtosis, available on line at http://www.intercapital.ro/intercapital_start/explicatii/distribKurtosis.htm

[8] Statistică multivariată, Lucrarea nr. 2 — Inferența statistică. Testarea ipotezelor statistice (Excel), available on line at http://profs.info.uaic.ro/~val/statistica/StatWork_2.pdf

[i] The data on net income per share could have been taken from the consolidated financial statements of entities included in the sample, given that IAS 33 Earnings per share requires entities to report basic earnings per share. But that standard does not require reporting of comprehensive income per share. Thus, to ensure comparability of data used in our study, we calculated the net income per share and the comprehensive income per share, using as denominator the total number of shares at the end of the studied accounting period.