International Journal for Quality Research 20(2) 621–634
ISSN 1800-6450

Vladimir Stančić
Nemanja Karapavlović[1]
Veljko Dmitrović

Article info:
Received 30.07.2025.
Accepted 26.01.2026.

DOI – 10.24874/IJQR20.02-20

NET INCOME AND COMPREHENSIVE INCOME AS INDICATORS OF FINANCIAL PERFORMANCE QUALITY: EVIDENCE FROM INSURANCE COMPANIES IN SOUTHEAST EUROPE

Abstract: *The purpose of the study is to examine whether components of other comprehensive income in case of insurance companies make the amount of comprehensive income significantly different from its net income and whether comprehensive income is more volatile in time than net income. The authors examine insurance companies (life, non-life and companies performing both insurance activities) from the chosen Southeast European countries (Slovenia, Croatia and Serbia). The authors generally find statistically significant difference between amounts of comprehensive income and net income. However, they don't confirm statistically significant differences in all three research levels (sample, country and insurance activity). On average, comprehensive income is more volatile than net income. However, at some research levels they find almost the same volatility of net income and comprehensive income.*

Keywords: *net income, other comprehensive income, comprehensive income, insurance companies from Slovenia, Croatia and Serbia*

1. Introduction

Net income (NI), also marked as profit or loss, is the total of income less expenses, excluding the components of other comprehensive income (OCI). OCI comprises income and expense items that are not recognized in NI as required or permitted by other financial reporting standards. Comprehensive income (CI), also marked as total comprehensive income, is the sum of NI and OCI and comprises all components of NI and OCI (International Accounting Standards Board – IASB, 2020). CI is also defined as "the change in equity during a period resulting from transactions and other events, other than those changes resulting from transactions with owners in their capacity as owners" (IASB, 2020). Starting from the income content, Hendriksen (1982) makes difference between the current operating and all-inclusive concepts of income. The first concept relates to effective usage of company's resources and earning a profit. In the broad sense, current operating concept of income relates to proper combination of the factors of production and management. Terms "current" and "operating" suggest that income includes only effects of transactions and other events that are controllable by management and that are the consequence of management decisions. According to the second concept of income (also marked as CI concept), income reflects the total change in company value recognized by recorded transactions and revaluation during the

[1] Corresponding author: Nemanja Karapavlović
Email: nkarapavlovic@kg.ac.rs

reporting period, except for transactions with owners. Debates regarding NI and (O)CI in the literature are often marked as debates between current operating and all-inclusive concepts of income (McCoy et al., 2009; Bloom, 2020; Fisher et al., 2022). In that sense, NI is indicator of current financial performances, whereas OCI presents information about potential income and cash flows from transactions generally to be finalized in the future (Du et al., 2015). Above mentioned definition of CI is consistent with all-inclusive approach and also suggests that effects of transactions with owners are not included into income determination. Therefore, CI reflects all changes in equity (net assets) arising from non-owner transactions (Khan et al., 2017).

Du et al. (2015) noticed that in the academic literature, prior research mostly examines the reporting location of OCI. Djaballah and Fortin (2021) point out that prior research regarding CI can be divided into research with purpose to: (1) access CI relevance for prediction of NI or cash flow in comparison with NI, (2) examine CI volatility compared to NI and the valuation of inherent risk and (3) determine whether OCI and its reporting location affect users' judgments and decisions. This paper has two objectives. The first objective is to examine whether OCI components of insurance companies from Serbia, Slovenia and Croatia make the amount of CI significantly different from the amount of NI. The second objective is to examine whether CI is more volatile in time than NI. The issues related to the NI, OCI and CI are challenging especially in the insurance companies context. Přečková and Palečková (2023) point out that research regarding insurance sector is sporadic and insufficient. In that sense, this paper contributes to the empirical literature. Besides, to the authors' best knowledge, this is the first paper that examines features and volatility of NI and CI in insurance companies from the chosen Southeast European countries.

Apart from the introduction, conclusion and references, the paper consists of three parts. In the first part literature review and hypothesis development are presented. This is followed by a sample and the methodology of research. In the third part, the results of the conducted empirical research followed by a discussion are shown.

2. Literature review and hypothesis development

Although the word "comprehensive" in the term CI implies that it is more important than NI, the opposite is the case (Bloom 2020). NI is the main indicator of the company's financial performance and starting point in the financial statements analysis. It is explicitly stated in the Conceptual Framework for Financial Reporting published by IASB (2018). However, complete understanding of the company's financial performance requires analysis of OCI and analysis of other information presented in the financial statements (for example, total assets, equity, etc.). NI consists of all realized and some (not all) unrealized gains and losses (for example, changes in fair value resulting from holding biological assets under IAS 41 (He et al., 2018), which is relevant for agriculture sector or changes in fair value resulting from holding investment properties under IAS 40). Unrealized gains and losses which are not included in NI because they distort its relevance and/or faithfulness are included in OCI (Obradović, 2021) (and also in CI). NI under International Financial Reporting Standards (IFRS) includes some gains and losses from changes in fair values of assets and liabilities and accruals from the application of the revenue recognition and matching principle. OCI includes further accruals that reflect transitory revaluations of assets and liabilities (Humayun Kabir & Laswad, 2011).

According to International Accounting Standard 1 (IAS 1) Presentation of Financial Statements, reporting entity presents all recognized incomes and expenses during the reporting period as components of NI unless other IFRS require or permit another

accounting treatment (IASB, 2020). Same standard as a minimum prescribes the following components of NI: (a) revenue, (b) finance costs, (c) share of the NI of associates and joint ventures measured by equity method, (d) tax expense and (e) a single amount for the total of discontinued operations (sum of the post-tax profit or loss of discontinued operations and the post-tax gain or loss recognized on the measurement to fair value less costs to sell or on the disposal of the assets or disposal group(s) constituting the discontinued operation) (IASB, 2018a; IASB, 2020). Currently there are no specified components of NI in more detail and structure for income statement. Reporting entities or national regulators choose their own presenting format, reducing comparability. For example, IASB study of 100 companies showed that over 60 companies present operating income, using at least nine different calculation methods (IASB, 2024). However, IFRS 18 Presentation and Disclosure in Financial Statements, which will be effective for annual reporting periods beginning on or after January 1, 2027 (with the possibility of earlier application) and which will replace IAS 1, introduces operating, investing, financing, income taxes and discontinued operations categories for income and expenses classification. It is expected that IFRS 18 will improve the structure of the income statement, and it requires all companies to provide new subtotals – operating profit and profit before financing and income taxes (IASB, 2024). Currently, under IFRS, there are some guidelines for presenting NI in case of insurance companies. According to the IFRS 17, it is necessary to make a distinction between: (1) an insurance service result, comprising insurance revenue and insurance expenses and (2) insurance finance income or expenses (IASB, 2018b).

Components of OCI according to IAS 1 (IASB, 2020) are: changes in revaluation surplus of owner-occupied properties, plant and equipment (including bearer plants) and intangible assets (under IAS 16 and IAS 38), gains and losses from re-measurements of defined benefit plans (under IAS 19), gains and losses arising from translating the financial statements of foreign operation (under IAS 21), gains and losses from investment in equity instruments designated at fair value through other comprehensive income (FVTOCI) (under IFRS 9), gains and losses on financial assets measured at FVTOCI (under IFRS 9), the effective portion of gains and losses on hedging instruments in a cash flow hedge and the gains and losses on hedging instruments that hedge investments in equity instruments measured at FVTOCI (under IFRS 9), changes in fair value of liabilities that is attributable to changes in the liability's credit risk (under IFRS 9), some gains and losses related to options, forwards and foreign currency spread (under IFRS 9), insurance finance income and expenses from contracts issued within the scope of IFRS 17 excluded from NI and finance income and expenses from reinsurance contracts held excluded from NI. Apart from these components, OCI should also include belonging OCI part related with associates and joint ventures accounted for using the equity method (IASB, 2020).

IAS 1 allows that CI is alternatively presented in one of the two following approaches (IASB, 2020): (1) in a single statement of profit or loss and other comprehensive income, i.e. the statement of comprehensive income or (2) in two statements – a statement of profit or loss (displaying NI components) and statement of comprehensive income (beginning with NI from statement of profit or loss and then displaying components of OCI). Regardless of the presentation model, companies report exactly the same values of NI, OCI and CI. The only difference is the reporting location (Bamber et al., 2010; Du et al., 2015). The components of OCI should be divided into (a) the components that can be subsequently, i.e., in future periods, included in NI, and (b) the components that cannot be subsequently included in NI. Other IFRS specify whether and when the amounts

previously recognized in OCI should be reclassified to NI (IASB, 2020). In the IFRS 18 there is no change to specific requirements for presenting OCI (IASB, 2024).

CI is much broader income concept than NI. These two income concepts are not the same because of certain income and expenses included in CI but excluded from NI (Johnson et al., 1995) which in essence represents OCI components. Under the influence of OCI components and its amounts, CI and NI may be significantly different. However, companies that do not have OCI in reporting period have the same amounts of NI and CI. Black (2016) believes that there is no full understanding of which OCI components are the most significant in certain industries and that importance of OCI components might vary with microeconomic and macroeconomic conditions. Kreuze and Newell (1999) found that for the majority of 100 randomly selected companies from the Fortune 500 the difference between CI and NI may not be significant. Ketz (1999) has conducted research on the sample of 90 companies from USA. He has found that average values of NI and CI at the sample level are not significantly different. However, average value participation of non-realized components of the results related to available-for-sale securities is bigger in the financial sector than in the non-financial sector. Recent studies indicate that OCI components became more significant over time. For example, Mahmood and Mahmood (2019), by analyzing 100 companies of different business activities from the USA, determine that, on average, NI and CI are significantly different in most cases. They consider that taking into account OCI when assessing company performances resulted in different conclusions then if the conclusions were made only based on NI.

Previous research regarding insurance companies (Godwin et al., 1998, according to Bamber et al., 2010; Jordan et al., 1998; Lee et al., 2006) showed that available-for-sale financial assets have significant share in total assets. It means that OCI of insurance companies is affected by value changes of mentioned assets. In that sense, OCI components related to secondary activities of non-financial companies could be related to core-business activities and relevant for the assessment of performances of finance companies such as insurance companies (Maines & McDaniel, 2000). However, category of available-for-sale financial assets is not used in current financial reporting terminology and practice. Contemporary counterparts for available-for-sale financial assets are financial assets subsequently measured at FVTOCI. It is expected that unrealized gains and losses on those assets are the most frequent OCI component for insurance companies which with the other OCI components could make significant difference between CI and NI. Therefore, we have formulated the first research hypothesis as follows:

H1: Components of OCI in insurance companies make CI significantly different from NI.

Characteristic of the contemporary financial reporting is the use of several measurement attributes for assets and liabilities, whereas historical cost and fair value are the most common in theoretical considerations and practice. In that sense, the contemporary model of income determination implies moving away from the traditional model that was valid in time of the domination of historical cost and moving closer to the model based on fair value (Wilson, 2007). NI consists of realized gains, realized and non-realized losses and some, but not all, non-realized gains (for example, gains on increase in fair value of investment properties, financial assets and liabilities subsequently measured at fair value through profit or loss). However, OCI consists of non-realized items. Items of OCI are affected by uncontrollable and volatile market forces (for example, stock market trends, changes in interest rates, changes in foreign currency exchange) and thus transitory in nature (Bamber et al., 2010; Chambers et al., 2007). Because it is reasonable to expect that year-to-year CI

variability, under the influence of OCI, tends to be higher than year-to-year NI variability. Significant income variability is marked as highlighted volatility in financial reporting and it is conditioned by simultaneous effect of market volatility, impossibility of accurately determining fair value by using inputs of the second level, and especially the third level, and mixed model of assets and liabilities measurement (Pantelić, 2021). Volatility of CI could lead investors to increase their assessment of the volatility of the company's performance which could result in lower market share prices and higher cost of equity (Henry, 2011). Significant variations of CI are key arguments against its usefulness in investment-decision making (Kwaśny & Sajnóg 2022).

Smith and Tse (1998) point out that financial statements preparers argue that OCI items would increase CI volatility even though the company's risk is unchanged. Chambers et al. (2007) found that NI of S&P 500 companies over the years 1994 through 2003 has lower variability than CI. Henry (2011) also examined S&P 500 companies, but over the years 2005 through 2010, and he found that for the half of the companies' standard deviation of CI is around 13% higher than the standard deviation on NI. It is interesting that, among the observed companies, it was precisely one insurance holding company that had the highest CI volatility relative to NI volatility. Humayun Kabir and Laswad (2011) determine that the standard deviation of CI for 86 companies from New Zealand is higher than standard deviation of NI. However, when NI and CI are deflated by total assets and market capitalization, standard deviation of NI is higher than standard deviation of CI, but obtained differences are not statistically significant.

Two research conducted by Khan and Bradbury (2014; 2016) also show that CI is more volatile than NI. The first research has included 2500 American non-financial companies, whereas the second research has concluded 92 non-financial companies from New Zealand. Hodder et al. (2006) examined income measures (NI, CI and full-fair-value income as constructed measure) of 202 U.S. commercial banks from 1996 to 2004. They found that standard deviation in full-fair-value income is higher than in CI and NI in each year. Volatility in CI is higher than volatility in NI in the case of 92.1% observed banks. Al-Yaseen and Al-Khadash (2011) find that income based on fair values is more volatile than income based on historical cost. Their sample consists of Jordanian insurance companies and they have compared NI obtained from the income statement and three constructed measures of income: NI excluding unrealized fair value gains/losses on held-for-trading financial assets, NI including unrecognized fair value gains/losses on investment property and NI including unrealized fair value gains/losses on available-for-sale financial assets. Turen and Abbas Al Husinny (2012) point out that volatility of insurers OCI may be lower than its volatility for other industries. They explain this attitude by restricted ability of insurers to invest in risky assets. Besides, insurance companies could have some quantitative limitations to invest in specific assets. From the other side, Karapavlović et al. (2020) found that CI of Serbian insurance companies is more volatile than NI. Starting from the results of mostly previously mentioned studies from all industries, we formulate the second hypothesis as follows:

H2: CI of insurance companies is more volatile in time than their NI.

3. Research sample and methodology

This paper deals with insurance companies from three countries – Serbia, Slovenia and Croatia. They are located on the Balkan Peninsula, and their histories are intertwined to a large extent, sharing a significant portion of common historical heritage. Their last major alliance, which also included Montenegro, Bosnia and Herzegovina, and North Macedonia (then Macedonia), was achieved through the SFR Yugoslavia, which

collapsed in 1991. Since that period, all these states have had to undergo a transition period from centrally planned economies to market economies. Today, they are fully independent and at different stages of economic development. Serbia economically belongs to the Western Balkans region, along with some other countries who aspire to join the EU, which is why they are also called "enlargement countries". Serbia obtained candidate status for EU membership in 2009, sharing the same fate with North Macedonia, Montenegro, Albania, and Turkey. On the other hand, Slovenia was the first to join the EU in 2004, followed by Croatia in 2013.

This situation significantly influenced the structuring of the research sample, given that Croatia and Slovenia, as the EU members, belong to the European insurance market, where companies from other member countries are included alongside domestic insurers. This is not the case with Serbia, of course, as it is not an EU member. The first criterion in selecting insurance companies was the research period, which includes financial reports from 2014 to 2022. In Serbia, the population of insurance companies that operated in the country in 2022 was included in the analysis, as all of them were operational in 2014 as well. Since the structure of insurers has not changed since 2018 (there were reductions in their numbers in previous years), it can be said that the entire market has been analyzed over a longer period. In the sample from the Croatian insurance market, all companies that operated continuously during the analyzed period and were members of the Croatian Insurance Bureau were included. Similarly, in the sample from Slovenia, all companies that operated continuously during the analyzed period and were members of the Slovenian Insurance Association were included. The sample structure is showed in Table 1.

Insurance companies in Serbia and Slovenia compile separate reports on other comprehensive income, while in Croatia, it is regulated by the legislation as an integral part of the income statement, which is actually called the comprehensive income statement. Therefore, the research is based on the individual financial statements and relies on hand-collected data from 378 sets of financial statements (42 insurance companies for nine reporting periods).

Table 1. Sample structure

	No.	%
Country		
Serbia	16	38.10
Slovenia	11	26.19
Croatia	15	35.71
Total:	42	100.00
Insurance activity		
Life insurance	10	23.81
Non-life insurance	12	28.57
Both insurance activities	20	47.62
Total:	42	100.00

For Serbian insurance companies, financial statements are available at website of Serbian Business Registers Agency (https://www.apr.gov.rs). Website of Slovenian Business Register was used for Slovenian insurance companies (https://www.ajpes.si), whereas financial statements for Croatian insurance companies are available at website of Annual Financial Reports Registry (https://rgfi.fina.hr/JavnaObjava-web/jsp/prijavaKorisnika.jsp). Internal database was created by regularly updating the available data on the mentioned websites. Amounts in financial statements of observed insurance companies were presented in three different currencies – RSD (Serbia), EUR (Slovenia) and HRK (Croatia). We didn't have information about the dates of the income and expense transactions in order to translate amounts of Serbian and Croatian insurance companies into EUR. Because exchange rates didn't fluctuate significantly, we have used average exchange rates as allowed by IASB (2018c) calculated according to the data available at websites of National Bank of Serbia and Croatian National Bank. Visual analysis of financial statements does not give users complete picture of reporting entity business quality.

Besides NI and CI amounts, we additionally analyse OCI components.

The first hypothesis was tested by Wilcoxon Signed-rank test. This test was used since the NI and CI of insurance companies were observed from the two aspects. The first aspect is the analysis of NI, and the second implies the addition of the components of OCI, so that CI would be obtained (Karapavlović et al., 2020). Wilcoxon Signed-rank test (non-parameter technique) is also used because NI and CI do not have normal distribution in all nine years. For the testing of the second hypothesis we have firstly calculated difference of the appropriate NI and CI amounts in comparative reporting years of the observed period. Thereafter, standard deviations of year-to-year change in NI and CI have been calculated. In order to examine whether the volatility of NI or CI is higher, ratio between standard deviation of CI to the standard deviation of NI has been calculated for each year. Similar methodology was used by Lee et al. (2006), Chambers et al. (2007) and Henry (2011). We have used significance level (α) of 0.05 in order to determine statistical significance. Data were processed by using the Microsoft Excel program and software package IBM® SPSS® 26 Statistics. The analysis was primarily conducted at the sample level, and after the segmentation of the observed insurance companies was carried out to the country level and insurance activity level (non-life insurance companies, life insurance companies and companies performing both life and non-life insurance).

4. Research results and discussion

Nine years average (hereinafter on average) shows that insurance companies have per 1.81 OCI components, whereby none of the insurance companies has more than five components. In case of 95.24% insurance companies there is at least one OCI component. On average, in case of only two insurance companies (4.76%) amounts of NI and CI are equal, because there are no OCI components. The most OCI components on average have Slovenian insurance companies (2.95). Slovenian insurance companies during the entire observed period have at least one OCI component. At the second place are Serbian insurance companies (1.55), whereas the fewest OCI components have Croatian insurance companies (1.26). Most of the OCI components, on average, have insurance companies that perform both insurance activities (2.05). Sector of non-life insurance have averagely 1.71 OCI components, whereas the sector of life insurance is on the third place (1.46). Analysis of the individual insurance companies, for example, shows that one insurance company from Slovenia which performs both insurance activities has 4.11 OCI components, on average. From the other side, one life insurance company from Serbia has no OCI components during the whole observed period. We additionally conducted Kruskal Wallis H and Mann-Whitney U tests in order to examine whether the differences between the numbers of OCI components are statistically significant (Table 2). At country level, we detected statistically significant differences between Serbian and Slovenian and Slovenian and Croatian insurance companies. We did not detect statistically significant differences between Serbian and Croatian insurance companies. We also did not detect significant differences between non-life insurance companies, life insurance companies and insurance companies performing both insurance activities regarding the number of OCI components.

Among OCI components, the most common is gains/losses on financial assets/securities subsequently measured at FVTOCI. On average, that component exists in case of 85.71% insurance companies. At the country level, that component is the most common in Slovenian and Croatian insurance companies (94.95% and 92.59%, respectively) and then in Serbian insurance companies (71.53%). From the insurance activity level, gains or losses on financial assets/securities subsequently measured at FVTOCI are the most present in the insurance companies

performing both insurance activities (99.44%) and then in non-life and life insurance companies (75% and 68.89%, respectively).

Changes in revaluation surplus are at the second place according to the appearing frequency. That OCI component is present in case of 43.39% insurance companies. At the country level, the order is as follows – Slovenia, Serbia, and Croatia (93.94%, 30.56%, and 20%, respectively).

Table 2. Kruskal-Wallis H (KWH) and Mann-Whitney U (MWU) tests for number of OCI components

	2014	2015	2016	2017	2018	2019	2020	2021	2022
KWH	16.805	15.974	16.224	20.299	19.396	18.533	18.533	18.711	17.450
df	2	2	2	2	2	2	2	2	2
p	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mann-Whitney U Test: Serbia vs. Slovenia									
MWU	32.000	30.000	22.000	18.000	16.000	19.00	19.000	19.500	23.500
Z	-3.00	-3.00	-3.42	-3.68	-3.69	-3.53	-3.53	-3.48	-3.29
p	0.003	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.003
Mann-Whitney U Test: Serbia vs. Croatia									
MWU	83.000	97.500	109.000	95.500	85.500	90.500	90.500	88.500	83.500
Z	-1.57	-0.97	-0.48	-1.09	-1.52	-1.30	-1.30	-1.38	-1.59
p	0.116	0.331	0.630	0.276	0.129	0.193	0.193	0.166	0.111
Mann-Whitney U Test: Slovenia vs. Croatia									
MWU	12.000	12.000	16.000	8.000	13.000	13.000	13.000	12.000	14.500
Z	-3.83	-3.85	-3.60	-4.09	-3.86	-3.86	-3.86	-3.89	-3.75
p	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Changes in revaluation surplus are almost equally present in non-life insurance companies and companies which perform both insurance activities (49.07% and 48.89%, respectively), whereas that OCI component exists in 25.56% life insurance companies, averagely. At the third place according to the frequency appearing are actuarial gains or losses from re-measurements of defined benefit plans (35.19%). As two previously mentioned OCI components, this component is the most common in Slovenian insurance companies (66.67%). On average, 46.53% of Serbian insurance companies present actuarial gains or losses. However, this OCI component is not present in the Croatian insurance companies. In spite of significant share of Croatian insurance companies in the structure of the insurance companies performing both insurance activities (40%), actuarial gains or losses are the most common in this category of insurance companies (38.89%), then in non-life insurance companies (37.96%) and life insurance companies (25.56%).

In order to test the first hypothesis, we conducted Wilcoxon Signed-rank test at the sample level, country level, and insurance activity level (Table 3). The sample level analysis reveals statistically significant difference between CI and NI in eight observed years ($p < 0.05$). Large differences are identified in 2014, 2016, 2019 and 2022 ($r \geq 0.5$), medium-sized differences in 2017, 2018 and 2021 ($0.3 \leq r < 0.5$), whereas difference in 2015 is small ($0 \leq r < 0.3$). Difference between CI and NI is not statistically significant only in 2020 ($p > 0.05$). However, differences in the individual cases in 2020 (and also in other years) do exist. For example, NI of one Serbian insurance company in 2020 was 7,177,796 €, whereas CI in the same year was 3,191,118 €. Additionally, we single out example of one Croatian insurance company also in 2020 – NI of 5,312,912 € has transformed into CI of -4,826,345 €.

CI of Serbian insurance companies are statistically different from their NI only in three years – 2019 (middle-sized), 2021

(large) and 2022 (small). Statistically significant differences between NI and CI exist in eight out of nine observed years in Slovenian insurance companies and that differences are mostly large. As previously mentioned, Slovenian insurance companies have the most OCI components. However, the number of OCI components is not the only reason for statistical difference between CI and NI. Serbian insurance companies are at the second place according to the number of OCI components, but in the most years NI and CI are not statistically different.

Table 3. Wilcoxon signed ranks tests (NI and NCI)

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Sample									
Z	-4.430	-2.081	-4.424	-3.589	-2.546	-5.099	-0.032	-4.037	-5.384
p	0.000	0.037	0.000	0.000	0.011	0.000	0.974	0.000	0.000
r	0.483	0.227	0.483	0.392	0.278	0.556	0.003	0.440	0.587
Serbia									
Z	-0.345	-1.726	-1.915	-1.538	-1.533	-2.045	-1.817	-2.783	-2.556
p	0.730	0.084	0.056	0.124	0.125	0.041	0.069	0.005	0.011
r	0.061	0.305	0.339	0.272	0.271	0.362	0.321	0.492	0.452
Slovenia									
Z	-2.934	-2.934	-2.490	-1.245	-2.934	-2.934	-2.578	-1.956	-2.934
p	0.003	0.003	0.013	0.213	0.003	0.003	0.010	0.050	0.003
r	0.626	0.626	0.531	0.265	0.626	0.626	0.550	0.417	0.626
Croatia									
Z	-3.180	-2.062	-2.919	-3.010	-2.272	-3.294	-0.795	-2.158	-3.408
p	0.001	0.039	0.004	0.003	0.023	0.001	0.427	0.031	0.001
r	0.581	0.376	0.533	0.550	0.415	0.601	0.145	0.394	0.622
Life insurance companies									
Z	-2.240	-0.700	-1.836	-1,955	-1.784	-1.836	-1.244	-1.125	-2.310
p	0.025	0.484	0.066	0.051	0.074	0.066	0.214	0.260	0.021
r	0.501	0.157	0.411	0.437	0.399	0.411	0.278	0.252	0.517
Non-life insurance companies									
Z	-1.682	-0.267	-1.511	-2.589	-1.255	-1.883	-0.941	-1.961	-2.589
p	0.093	0.790	0.131	0.010	0.209	0.060	0.347	0.050	0.010
r	0.343	0.055	0.308	0.528	0.256	0.384	0.192	0.400	0.528
Insurance companies performing both insurance activities									
Z	-3.621	-2.093	-3.702	-2.093	-2.616	-3.920	-1.045	-3.173	-3.920
p	0.000	0.036	0.000	0.036	0.009	0.000	0.296	0.002	0.000
r	0.573	0.331	0.585	0.331	0.414	0.620	0.165	0.502	0.620

Croatian insurance companies have the fewest OCI components on average, but in the eight out of nine observed years CI and NI are statistically different. For example, previously mentioned Croatian insurance company in which net profit was transformed into comprehensive loss has only one OCI component – losses on securities subsequently measured at FVTOCI. It means that value of OCI components could also be the cause for difference between CI and NI, but not only the number of OCI components.

The most pronounced statistically significant difference between NI and CI is in case of insurance companies performing both insurance activities. In 2014, 2016, 2019, 2021 and 2022 differences are large, whereas in 2015, 2017 and 2018 are medium-sized. CI of non-life insurance companies are statistically different from their NI only in three years – 2017 (large), 2021 (middle-sized) and 2022 (large), whereas in case of life insurance companies large differences exist in 2014 and 2022.

The second hypothesis is also tested at three levels (Table 4). Ratio of the standard deviation of year-on-year change in CI to the standard deviation of year-on-year change in NI higher than one indicates that CI is more volatile than NI.

Table 4. Ratio of the standard deviation of year-on-year change in CI to the standard deviation of year-on-year change in NI

2015-2014	2016-2015	2017-2016	2018-2017	2019-2018	2020-2019	2021-2020	2022-2021	Average
Sample								
1.36	2.68	1.46	2.21	2.38	3.35	1.38	1.95	2.10
Serbia								
1.46	1.44	3.40	2.14	1.42	5.95	1.01	1.16	2.25
Slovenia								
2.13	2.65	1.43	4.92	3.99	1.92	1.89	1.69	2.58
Croatia								
0.99	2.62	1.13	1.03	11.55	5.09	2.89	8.74	4.26
Life insurance companies								
2.51	9.52	2.22	9.36	8.05	3.85	1.25	1.38	4.77
Non-life insurance companies								
3.04	0.94	1.73	1.32	1.44	1.31	1.27	2.42	1.68
Insurance companies performing both insurance activities								
1.30	2.35	1.42	1.75	1.91	2.98	1.83	2.65	2.02

At the sample level, this ratio is higher than one during the whole observed period. Average value of mentioned ratio shows that standard deviation of CI is around 110% higher than standard deviation of NI. CI of Serbian insurance companies is more volatile than their NI during whole observed period and on average. However, in 2021 compared to 2020 ratio is slightly higher than one, which indicates almost the same volatility of NI and CI. Slovenian insurance companies presented more volatile CI than NI also during the whole observed period. On average, standard deviation of CI is around 158% higher than standard deviation of NI. The biggest average value of used ratio at country level exists in case of Croatian insurance companies, because of high values in 2019-2018, 2020-2019 and 2022-2021. However, in 2015-2014 ratio is slightly lower than one, whereas in 2018-2017 ratio is slightly higher than one, which indicates almost the same volatility of NI and CI. On the insurance activity level ratio is higher than one during the whole observed period, except in the 2016-2015 for non-life insurance companies. In those insurance companies we evidence the smallest average ratio value. The biggest average value of used ratio at insurance activity level exists in case of life insurance companies, because of high values in 2016-2015, 2018-2017 and 2019-2018.

In order to examine whether differences between standard deviation of year-on-year change in CI to the standard deviation of year-on-year change in NI are statistically significant, we additionally conducted Wilcoxon Signed Ranks Tests (Table 5).

Table 5. Wilcoxon signed ranks tests (standard deviations of change in NI and NCI)

	Sample	*Country level*			*Insurance activity level*		
		Serbia	*Slovenia*	*Croatia*	*Life insurance companies*	*Non-life insurance companies*	*Insurance companies performing both insurance activities*
Z	-2.521	-2.521	-2.521	-2.240	-2.521	-2.380	-2.521
p	0.012	0.012	0.012	0.025	0.012	0.017	0.012
r	0.275	0.446	0.537	0.409	0.564	0.486	0.399

Differences are statistically significant at all three observed levels. They are the largest in case of Slovenian insurance companies at country level, life insurance and non-life insurance companies at sector level of observation ($r \geq 0.5$) and the middle-sized in the remaining cases ($0.3 \leq r < 0.5$).

5. Conclusion

Features of CI and NI of non-financial companies have been the subject of a lot of prior research, but the research focused on the financial sector, especially insurance companies is relatively scarce. To the authors' best knowledge, this is the first paper that examines NI and CI of Serbian, Slovenian and Croatian insurance companies. We examined whether components of OCI in case of insurance companies make CI significantly different from NI and whether CI is more volatile in time than NI in a nine-year period. The sample level analysis reveals statistically significant differences between CI and NI in eight out of nine observed years. CI of Serbian insurance companies are statistically different from their NI in three years, whereas statistical differences in case of Slovenian and Croatian insurance companies exist in nine and eight years, respectively. Statistically significant differences between CI and NI in case of insurance companies performing both insurance activities exist in eight years. CI of non-life insurance companies is statistically different from their NI in three years, whereas in case of life insurance companies large differences exist in two years. Because we didn't confirm statistically significant differences between CI and NI in all three research levels (sample, country and insurance), the first hypothesis is partially accepted. Our findings indicate that financial statements users should take into account both NI and CI when assessing performances and forecasting business operations and performances of insurance companies in the future.

On average, ratio of the standard deviation of year-on-year change in CI to the standard deviation of year-on-year change in NI is higher than one during the whole observed period. Differences between mentioned standard deviations are statistically significant at all three research levels. Generally, it indicates that CI is more volatile than NI. However, in Serbian and Croatian insurance companies there are ratio values slightly lower and slightly higher than one which indicates almost the same volatility of NI and CI in those countries. At the insurance activity level, ratio is higher than one during the whole observed period, except in 2016 compared to 2015 for non-life insurance companies. In that sense, the second hypothesis is also partially accepted. More volatility of CI than NI could potentially reduce its predictive ability as an element of the relevance. It could generally mean that NI better satisfies this qualitative characteristic of financial information than CI. However, further research may be conducted in order to examine predictive ability of CI and NI in case of Serbian, Slovenian and Croatian insurance companies.

Obtained results could be the basis for future research regarding insurance companies from countries with similar level of economic development and similar conditions on insurance market. Further research should also include insurance companies from some EU 15 countries, because Slovenia and Croatia became the EU members in different time, whereas Serbia aspires to join the EU. Further research regarding performance of insurance companies may be based on both NI and CI in the calculations of indicators. Observed insurance companies use full IFRS as financial reporting basis. In that sense, sampled insurance companies have good predispositions for preparing quality financial statements, because IFRS worldwide have been considered as the quality financial reporting basis (Obradović & Karapavlović, 2017). On the other side, examination of the input data quality was done according to the opinions available in external auditor's

reports. As we mentioned, the research was based on 378 sets of financial statements (42 insurance companies for nine reporting periods). 91% of them were assessed with an unqualified opinion. Six companies across the entire sample had emphasis of matter opinion in one analyzed year, while five companies had an emphasis of matter opinion in two or more years. Only one company registered in Serbia received a qualified opinion in one observed year (an emphasis of matter opinion in six more years). Implementation of IFRS by observed insurance companies also means that information presented in their financial statements is generally comparable. However, IFRS offers the scope for reporting entities to choose accounting policies, due to the fact that the set of financial reporting standards is flexible (Nobes, 2011; Spasic et al., 2021). We didn't examine comparability of the alternative accounting policies (for example, subsequent measurement of owner-occupied properties, plant and equipment and investment properties).

References:

Al-Yaseen, B. S., & Al-Khadash, H. A. (2011). Risk relevance of fair value income measures under IAS 39 and IAS 40. *Journal of Accounting in Emerging Economies, 1*(1), 9-32. doi: 10.1108/20421161111107831

Bamber, L., Jiang, J., Petroni, K. R., & Yanyan Wang, I. (2010). Comprehensive Income: Who's Afraid of Performance Reporting?. *Accounting Review, 85*(1), 97-126. doi: 10.2308/accr.2010.85.1.97

Black, D. E. (2016). Other comprehensive income: a review and directions for future research. *Accounting and Finance, 56*(1), 9-45. doi: 10.1111/acfi.12186

Bloom, R. (2020). Evolution of Other Comprehensive Income. *Accounting Historians Journal, 47*(2), 1-10. doi: 10.2308/aahj-18-033

Chambers, D., Linsmeier, T. J., Shakespeare, C., & Sougiannis, T. (2007) An evaluation of SFAS No. 130 comprehensive income disclosures. *Review of Accounting Studies, 12*(4), 557–593. doi: 10.1007/s11142-007-9043-2

Djaballah, A., & Fortin, A. (2021). Value Relevance of Comprehensive Income for the Canadian Market. *Accounting Perspectives / Perspectives Comptables, 20*(1), 49-77. doi: 10.1111/1911-3838.12235

Du, N., Stevens, K., & Mcenroe, J. (2015). The effects of comprehensive income on investors' judgments: An investigation of one-statement vs. two-statement presentation formats. *Accounting Research Journal, 28*(3), 284-299. doi: 10.1108/ARJ-11-2013-0083

Fisher, M. J., Curran, S. C., & Lairrie, M. J. (2022). Are loses being hidden in other comprehensive income? A twenty-year examination of the S&P 100'S AOCI. *Journal of Business and Accounting, 15*(1), 141-155.

Hendriksen, E. S. (1982). *Accounting Theory*. Homewood: Richard D. Irwin.

He, L. Y., Wright, S., & Evans, E. (2018). Is fair value information relevant to investment decision-making: Evidence from the Australian agricultural sector. *Australian Journal of Management, 43*(4), 555-574. doi: 10.1177/031289621876523

Henry, E. (2011). Presentation of Comprehensive Income: Another (Small) Step Toward Convergence. *The Journal of Corporate Accounting & Finance, 23*(1), 85-90. doi: 10.1002/jcaf.21726

Hodder, L. D., Hopkins, P. E., & Wahlen, J. M. (2006). Risk-Relevance of Fair-Value Income Measures for Commercial Banks. *The Accounting Review, 81*(2), 337-375. doi: 10.2308/accr.2006.81.2.337

Humayun Kabir, M., & Laswad, K. F. (2011). Properties of net income and total comprehensive income: New Zealand evidence. *Accounting Research Journal, 24*(3), 268-289. doi: 10.1108/10309611111187000

International Accounting Standards Board (IASB) (2018). *The Conceptual Framework for Financial Reporting*. London: IFRS Foundation.

International Accounting Standards Board (IASB) (2018a). *Non-current Assets Held for Sale and Discontinued Operations IFRS 5*. London: IFRS Foundation.

International Accounting Standards Board (IASB) (2018b). *Insurance Contracts IFRS 17*. London: IFRS Foundation.

International Accounting Standards Board (IASB) (2018c). *The Effects of Changes in Foreign Exchange Rates IAS 21*. London: IFRS Foundation.

International Accounting Standards Board (IASB) (2020). *Presentation of Financial Statements IAS 1*. London: IFRS Foundation.

International Accounting Standards Board (IASB) (2024). *New IFRS Accounting Standard will aid investor analysis of companies' financial performance*. Retrieved April 16, 2024, from: https://www.ifrs.org/news-and-events/news/2024/04/new-ifrs-accounting-standard-will-aid-investor-analysis-of-companies-financial-performance/

Johnson, L. T., Reither, C. L., & Swieringa, R. J. (1995). Toward Reporting Comprehensive Income. *Accounting Horizons*, *9*(4), 128-137.

Jordan, C. E., Clark, S. J., & Smith, W. R. (1998). Earnings management under SFAS No. 115: Evidence from the insurance industry. *Journal of Applied Business Research*, *14*(1), 49–56. doi: 10.19030/jabr.v14i1.5727

Karapavlović, N., Stančić, V., & Petrović, E. (2020). Financial reporting on comprehensive income – the case of insurance companies from the Republic of Serbia. *Teme*, *44*(4), 1481-1498. doi: 10.22190/TEME200922087K

Ketz, E. (1999). Comprehensive Income: What Do the Numbers Disclose?. *The Journal of Corporate Accounting & Finance*, *10*(4), 79-96.

Khan, S., & Bradbury, M. E. (2014). Volatility and risk relevance of comprehensive income. *Journal of Contemporary Accounting & Economics*, *10*(1), 76-85. doi: 10.1016/j.jcae.2014.01.001

Khan, S., & Bradbury, M. E. (2016). The volatility of comprehensive income and its association with market risk. *Accounting & Finance*, *56*(3), 727-748. doi: 10.1111/acfi.12108

Khan, S., Bradbury, M. E. and Courtenay, S. (2017). Value Relevance of Comprehensive Income. *Australian Accounting Review*, *28*(2), 279–287. doi: 10.1111/auar.12181

Kreuze, J. G., & Newell, G. E. (1999). The Relationship of Net Income to Comprehensive Income: An Analysis of Fortune 500 Companies. *American Journal of Business*, *14*(1), 53-58. doi: 10.1108/19355181199900005

Kwaśny, J., & Sajnóg, A. (2022). International Determinants of Comprehensive Income Reporting by Groups – An Analytical and Comparative Study of Poland and Germany. *Comparative Economic Research. Central and Eastern Europe*, *25*(2), 163-185. doi: 10.18778/1508-2008.25.18

Lee, Y., Petroni, K. R. and Shen, M. (2006). Cherry Picking, Disclosure Quality, and Comprehensive Income Reporting Choices: The Case of Property-Liability Insurers. *Contemporary Accounting Research*, *23*(3), 655–692. doi: 10.1506/5QB8-PBQY-Y86L-DRYL

Maines, L. A., & Mcdaniel, L. S. (2000). Effects of Comprehensive-Income Characteristics on Nonprofessional Investors' Judgments: The Role of Financial-Statement Presentation Format. *The Accounting Review*, *75*(2), 179-207.

Mahmood, J., & Mahmood, I. (2019). Comprehensive income disclosure (the case of US companies). *Cogent Economics & Finance*, *7*(1), 1674587. 10.1080/23322039.2019.1674587

Mccoy, T. L., Thompson, J. H., & Hoskins, M. A. (2009). Early Evidence of the Volatility of Comprehensive Income and Its Components. *Academy of Accounting and Financial Studies Journal*, *13*, 83-92.

Nobes, C. (2011). IFRS Practices and the Persistence of Accounting System Classification, *Abacus*, *47*(3), 267-283. doi: 10.1111/j.1467-6281.2011.00341.x

Obradović, V. (2021). *Finansijsko izveštavanje* (*Financial Reporting*). Kragujevac: Ekonomski fakultet Univerziteta u Kragujevcu.

Obradović, V., & Karapavlović, N. (2017). Analiza finansijskog položaja i rentabilnosti privrednih subjekata iz Šumadije i Pomoravlja [Analysis of financial position and performance of business entities from Šumadija and Pomoravlje district]. In Veselinović, P., Makojević, N., & Slavković, M. (ed), *Uticaj globalizacije na poslovno upravljanje i ekonomski razvoj Šumadije i Pomoravlja* (*The influence of globalization on business management and economic development of Šumadija and Pomoravlje district*) (pp. 331–346). Kragujevac: Univerzitet u Kragujevcu, Ekonomski fakultet.

Pantelić, M. (2021). Problemi u primeni računovodstva fer vrednosti (Problems in applying fair value accounting). In Janjić, V., Malinić, D., Todorović, M., & Jovanović, D. (eds), *Računovodstvena znanja kao činilac ekonomskog i društvenog napretka* (*Accounting knowledges as a factor of economic and social prosperity*) (pp. 202-217). Kragujevac: Faculty of Economics, University of Kragujevac.

Přečková, L., & Palečková, I. (2023). Financial Stability of the Czech Insurance Companies. *Ekonomický časopis*, *71*(1), 65-86. doi: 10.31577/ekoncas.2023.01.04

Smith, P. A., & Tse, S. (1998). Reporting Comprehensive Income: Does It Realy Affect Stock Prices?. *The Journal of Corporate Accounting & Finance*, *9*(4), 75-86. doi: 10.1002/jcaf.3970090408

Spasic, D., Abouagla, M. A., & Sekerez, V. (2021). Are IFRS adoptable for a developing country with a specific business culture? Attitudes of Sudanese accountants. *Economic Horizons*, *23*(2), 157-172. doi: 5937/ekonhor2102157S

Turen, S., & Abbas Al Hussiny, F. S. (2012). Comprehensive or Net Income in Performance Evaluation of Insurance Firms: Evidence from GCC Countries. *International Research Journal of Finance and Economics*, *98*, 97-105.

Wilson, A. (2007). The relevance and reliability of fair value measurement. In Walton, P. (ed), *The Routledge Companion to Fair Value and Financial Reporting* (pp. 196-209). Oxon: Abingdon, Routledge.

Vladimir Stančić
University of Kragujevac,
Faculty of Economics,
Kragujevac,
Republic of Serbia
vstancic@kg.ac.rs
ORCID 0000-0002-8115-1833

Nemanja Karapavlović
University of Kragujevac,
Faculty of Economics,
Kragujevac,
Republic of Serbia
nkarapavlovic@kg.ac.rs
ORCID 0000-0002-3421-7828

Veljko Dmitrović
University of Belgrade,
Faculty of Organizational Sciences,
Belgrade,
Republic of Serbia
veljko.dmitrovic@fon.bg.ac.rs
ORCID 0000-0001-8924-9758