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Beyond Net Income: The Incremental Value Relevance, Predictability, and Performance Implications of Total Comprehensive Income — Evidence from the Palestine Exchange

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Abstract: The purpose of this study is to investigate the value relevance and forecasting performance of net income (NI), other comprehensive income (OCI), and total comprehensive income (TCI) within the sample of Palestine Exchange (PEX)-listed companies over the period 2020-2025. Particularly, this study aims at finding out if the OCI offers additional information to NI and book value for explaining firm market value, if there exists differences in the predictive ability of NI and OCI in terms of future earnings and future operating cash flows, and if there are any differences in the value relevance of OCI for financial and non-financial firms. Applying panel regression models with firm-level controls, industry fixed effects, and year fixed effects on the panel of 36 listed companies, 216 firm-year observations, the findings indicate that both NI and TCI have positive relationship with firm market value. Furthermore, the OCI provides significant incremental explanatory power to NI and book value, which suggests that OCI includes valuation information not available in conventional accounting numbers. On the contrary, NI has a significant power in predicting future earnings and future operating cash flows, while the OCI shows no such ability. In addition, it has been found that the value relevance of OCI is significantly higher for the financial firms than non-financial firms, which is expected given the exposure of financial firms to financial instruments and fair value measurements. Overall, the results of this study suggest that the usefulness of comprehensive income is multifold – OCI is valuable complement to conventional earnings in stock valuation, and NI is still more powerful in forecasting. This study makes an important contribution to the literature on comprehensive income as it presents recent empirical evidence from a small emerging market.

Keywords: Total Comprehensive Income; Other Comprehensive Income; Value Relevance; Predictability; Palestine Exchange; Emerging Markets; Panel Data

Type: Research paper



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1. Introduction

The issue of whether NI should be maintained as the main accounting performance indicator or if TCI is a valuable piece of information for the investors has gained prominence in the field of accounting research. Overall, the existing literature on value-relevance has clearly shown that accounting data has a significant explanatory power for understanding stock valuations and evaluating performance of firms (Ball & Brown, 1968; Barth et al., 2001). In particular, the issue of comprehensive income has become a major area of concern in accounting research since traditional NI does not cover all changes in firm's economic resources for the reporting period.

In accordance with IFRS guidelines, financial performance is the sum of profit or loss and other items recognized in OCI and therefore provides an extended measure of changes in equity from non-owner sources (IASB, 2023, 2024). Generally, OCI covers a range of items including foreign currency translation adjustments, changes in fair value of some financial instruments, revaluation surplus, and actuarial gains or losses. Although these items may indicate some changes in the economic value of the firm that do not reflect in traditional NI, the frequently unrealized, volatile, and potentially reversing nature of OCI items leads to the question of whether these items contain information that is used by investors in valuation of the firm (Dhaliwal et al., 1999; Jones & Smith, 2011; Salem et al., 2026a).

Prior empirical literature is inconclusive concerning the benefits of comprehensive income. While some studies reveal that OCI or more comprehensive income metrics carry additional information over and above the information provided by earnings and book value, hence the investors use some of this information in stock valuation (Biddle & Choi, 2006; Chambers et al., 2007; Kanagaretnam et al., 2009), others reveal that NI is still more persistent and informative for predicting future earnings or performance (Dhaliwal et al., 1999; Jones & Smith, 2011). Hence, the usefulness of comprehensive income cannot always be assessed unidimensionally. OCI information can assist in valuing the company without having persistence needed to predict the financial performance of the firm.

Also, the results found in the previous literature suggest that the usefulness of OCI may be affected by the institutional setting, the accounting environment, capital market characteristics, and financial reporting context in which the information is generated and utilized. The evidence from diverse reporting contexts shows that the value relevance of OCI information does not have to be similar in all contexts (Goncharov & Hodgson, 2011; Mechelli & Cimini, 2014;

Harasheh et al., 2021). In other words, such a variation becomes very important when it comes to emerging capital markets, which are characterized by a different financial reporting environment compared to developed markets.

PEX therefore constitutes an interesting context within which to study the value relevance and prediction ability of comprehensive income measures. Being a relatively smaller and emerging capital market, PEX constitutes an interesting case through which one may seek to test whether the information contained within NI, OCI, and TCI reported by companies in bigger capital markets can still hold in the face of firms operating in smaller capital markets. The relevance of such an investigation is informed by the reality that accounting information can only be useful if it not only has been recognized and reported within financial statements but also incorporated into market participants' decision-making processes. Extant comprehensive-income literature shows that the value relevance of OCI varies across institutional and capital markets contexts (Mechelli & Cimini, 2014; Harasheh et al., 2021), providing further evidence for the need to extend the research literature in emerging capital markets contexts.

A second question pertains to the possibility of the value relevance of OCI varying by sector. This is because firms in the financial sector tend to be exposed to a greater number of financial instruments and fair-value measurement and adjustment than non-financial firms, and hence, their comprehensive income measures might become more useful in capturing changes in economic performance. Past studies have found that the utility of OCI depends not only on the type of OCI but also on the characteristics of the firm reporting it (Cahan et al., 2000; Chambers et al., 2007; Kanagaretnam et al., 2009). Given this context, the current study aims to examine the value relevance and predictive power of NI, OCI and TCI among PEX-listed companies for the period 2020-2025. Specifically, the study aims to identify if NI and TCI are linked with firm market value, if OCI provides additional information to that provided by NI and book value, if NI and OCI have differential predictive power with respect to future earnings and future operating cash flows, and if there is any difference in value relevance of OCI between financial and non-financial firms. By examining valuation, prediction and sectoral differences, the study offers a multidimensional examination of the usefulness of comprehensive income information.

There are several contributions made by the study to the literature. First, it expands the body of literature on comprehensive income and value relevance into Palestine Exchange, which is an emerging capital market and relatively neglected in accounting research. Second, in contrast to most previous studies where the focus is only on contemporaneous relation between comprehensive income and market value, the study distinguishes between value relevance and predictive power of comprehensive income information. Third, the study aims to assess the incremental information content of OCI between financial and non-financial firms. This way, the study complements prior literature on the value relevance and predictive power of comprehensive income (Biddle & Choi, 2006; Kanagaretnam et al., 2009; Jones & Smith, 2011; Salem et al., 2026b; Mechelli & Cimini, 2014).

2. Literature Review and Hypotheses Development

2.1. Theoretical Foundation

The theory underpinning this study integrates decision usefulness as the main concept, whereas signaling theory and information asymmetry serve as complementary theories in explaining why and how comprehensive income information might be incorporated in investors' valuation and prediction decision-making process. According to the decision usefulness theory, financial information is deemed to be useful if it is relevant to the users' economic decisions including its predictive or confirmatory capability (IASB, 2024). Hence, in this particular case, the key question to be answered is whether the NI, OCI and TCI accounting information is provided by the firms and whether such information is valuable for making decisions about their value and performance predictions (Biddle & Choi, 2006; Jones & Smith, 2011).

The valuation function of accounting information serves as the theoretical foundation for hypotheses H1-H3. According to Ohlson (1995), there is a straightforward conceptual relationship between equity value and accounting information, particularly earnings and book value. In light of the above, it can be expected that NI would have a positive relationship with the market value of the firm (H1) (Ohlson, 1995; Barth et al., 2001). TCI measures the financial performance of the firm by expanding the income measure through the inclusion of OCI (Chambers et al., 2007; Jones & Smith, 2011; Goncharov & Hodgson, 2011). Hence, in case this more comprehensive measure of performance measures economically significant changes as well, then TCI would be positively related to the market value of the firm (H2). More significantly, however, the decision-usefulness theory suggests that the OCI is useful insofar as it adds information that cannot be explained by NI and book value (Dhaliwal et al., 1999; Biddle & Choi, 2006).

The signaling theory adds to the valuation theory in that it shows how accounting communications can help transmit information to external parties in the market when there is information available to the managers and unavailable to the investors (Spence, 1973). Regarding the comprehensive income, the OCI could be having information related to unrealized economic changes, which include fair-value adjustments, foreign currency effects, and other economic changes which are not incorporated in the current-period NI. As much as such items contain some information regarding the economic state, disclosing them is an added signal to the investors.

The predictive aspect of the usefulness of decisions lies at the root of the hypotheses H4 and H5. Useful accounting data must help the user to evaluate the firm value and the financial results expected by the firm in the future as well (Chambers et al., 2007; Jones & Smith, 2011). NI captures mainly operating and achieved performance of the business, while OCI includes elements that may be transitory and thus have different persistence than NI. Dhaliwal et al. (1999) provide the predictive power of NI and CI as regards future earnings (H4) and operating cash flows (H5) is thus an empirical question.

Another potential complementing explanation for the variation in the information content of comprehensive income is that of information asymmetry. The financial reporting system could help alleviate information asymmetry by making firm-specific information available to outside investors. This role of

financial reporting could become especially significant when the OCI is linked to economic risk exposures that are not uniform across sectors. Previous studies have shown that the informativeness of OCI and the OCI components is dependent on the economic exposure embodied in the OCI and the accounting measures used to calculate it (Cahan et al., 2000; Chambers et al., 2007; Kanagaretnam et al., 2009; Jones & Smith, 2011). Whereas financial firms exhibit higher risk exposures to financial instruments and fair value measures, the OCI of non-financial firms might have an economic foundation different from that of financial firms. Thus, the informativeness of OCI need not be uniform across sectors, which is why hypothesis H6 becomes theoretically justified.

Overall, these theories represent a well-aligned and interrelated set of ideas. The idea of decision usefulness serves as the overall benchmark to assess NI, OCI, and TCI based on their value relevance and predictive ability (IASB, 2024); the theory of signaling gives an explanation of why disclosures of OCI can convey additional economic information to outside investors (Spence, 1973; Chambers et al., 2007); and information asymmetry serves as the basis for assessing whether the usefulness of this information is dependent on the reporting setting and the industry (Cahan et al., 2000; Kanagaretnam et al., 2009). Hence, H1-H3 cover the valuation and incremental information aspects of the framework, while H4-H5 cover the predictive aspects of the framework, and H6 considers possible sector-specific differences in the information content of OCI.

2.2. Hypotheses Development

The value relevance of accounting information has long been a central issue in accounting research. Seminal evidence provided by Ball and Brown (1968) demonstrated that accounting earnings contain information reflected in security prices, establishing an important foundation for subsequent capital-market-based accounting research. Later, Barth et al. (2001) emphasized the relevance of value-relevance research for assessing whether accounting information reflects information used by equity investors. In this context, Ohlson (1995) developed a valuation framework linking firm market value to accounting numbers and demonstrated how earnings and book value jointly explain equity value.

Dhaliwal et al. (1999) were among the first researchers who comprehensively analyzed this issue and found out that, in general, comprehensive income did not provide a greater ability in predicting stock returns and market value than net income. It means that the role of net income in assessing the performance of firms had not changed yet. The same conclusion was drawn by O'Hanlon and Pope (1999), who found little support for the idea that dirty-surplus accounting numbers added value to equity in the UK.

Nevertheless, further research revealed some nuances. According to Chambers et al. (2007), value relevance of the comprehensive income is mainly determined by the nature of the OCI components and the way of their presentation. Also, Subsequent research provides more nuanced evidence. Biddle and Choi (2006) show that the usefulness of comprehensive income depends on the decision context and the definition of income employed. Similarly, Mechelli and Cimini (2014) find that although NI is generally more value relevant than comprehensive income, OCI provides incremental information beyond NI and book value, with significant differences across institutional settings.

Moreover, according to Jones & Smith (2011), some OCI components have value-relevant information, but their value relevance differs by reporting categories.

Nevertheless, despite the contribution of the mentioned authors, empirical research in the area remains controversial, especially for emerging capital markets because institutions' characteristics of such countries are significantly different from the developed ones. Therefore, checking the connection between NI and TCI with firm market value becomes the empirical question to be studied in the Palestinian capital market.

Accordingly, the following hypotheses are proposed:
H1: Net Income is positively associated with firm market value.
H2: Total Comprehensive Income is positively associated with firm market value.

Incremental Information Content of Other Comprehensive Income

As the TCI is derived mathematically from Net Income and Other Comprehensive Income, the important empirical issue to examine is not whether the TCI is superior to NI, but whether the OCI offers more information than is available in the traditional measures.

The Decision Usefulness Theory postulates that if the OCI includes any economically valuable information which is not included in the net income, then adding the OCI will increase the valuation ability of investors. Dhaliwal et al. (1999) have suggested that the value-added by the comprehensive income arises only from whether the OCI includes information not captured by earnings. Also, Chambers et al. (2007) have shown that the separate disclosure of OCI items will add information value to the investors through enhancing the transparency of financial reporting.

Jones and Smith (2011) have provided evidence that some of the OCI items are able to generate incremental value relevance over the net income, while the value relevance varies by item. Likewise, Goncharov and Hodgson (2011) found that there was incremental information value in OCI disclosures, especially for unrealized gains/losses that contain future economic expectations.

Empirical findings on the incremental value relevance of OCI have not been consistent either. Although some researches have shown that OCI has incremental value relevance to NI and book value, there are other findings which show that NI is the major indicator of performance. For instance, Mechelli & Cimini (2014) show that NI is more value relevant than comprehensive income, but OCI still has incremental value relevance beyond NI and book value. Cross-country variation in incremental value relevance of OCI has also been documented by them, which indicates that the value relevance of OCI might be dependent on the country environment.

Accordingly, the central hypothesis of this study is formulated as follows:
H3: Other Comprehensive Income provides incremental explanatory power for firm market value beyond that already provided by Net Income and book value.

Predictive Ability of Net Income and Total Comprehensive Income

Beyond contemporaneous value relevance, quality of accounting information can be assessed on the basis of its ability to predict future

performance of firms. Persistent earnings are more informative about the future profitability and cash flow capacity of firms than transient earnings.

Since Net Income is largely dependent on the realization of operating activities, it is believed that it should display more persistence and forecastability than comprehensive income. However, OCI consists of the items which are unrealized and their fair value adjustments can reverse in future periods or depend on the prevailing market environment (Jones & Smith, 2011).

Previous research indicates a high degree of difference between NI and OCI in terms of persistence and predictive relevance. NI is largely dependent on past operating performance, which makes it more likely to be persistent while OCI includes elements that are often unrealized and likely to reverse in the future. Though OCI has been argued to carry useful economic information about company valuations, its temporary nature means that it is unlikely to help forecast future earnings and operating cash flows (Dhaliwal et al., 1999; Biddle & Choi, 2006; Jones & Smith, 2011).

Accordingly, whether comprehensive income provides superior predictive ability compared with net income remains an empirical issue requiring further investigation, particularly in emerging capital markets.

Therefore, the following hypotheses are proposed:

H4: Net Income has greater predictive ability for future earnings than Other Comprehensive Income.

H5: Net Income has greater predictive ability for future operating cash flows than Other Comprehensive Income.

Sectoral Differences in the Information Content of Comprehensive Income

The usefulness of comprehensive income may also be affected by industries due to the wide differences among the OCI components based on the type of business conducted by each firm. Banks and other financial firms generally include large amounts of unrealized gains and losses due to the fair value adjustment of financial instruments while the OCI items of industrial and service firms include items such as foreign currency translation, pension liabilities, and revaluation of assets.

Research has shown that OCI exhibits a higher level of value relevance in firms that are more exposed to fair value accounting, especially banks and financial firms (Kanagaretnam et al., 2009). Likewise, Jones and Smith (2011) found that there is an important variation in the persistence and value relevance of OCI components due to the economic content of these components. Therefore, industry features may affect how investors use comprehensive income in valuation.

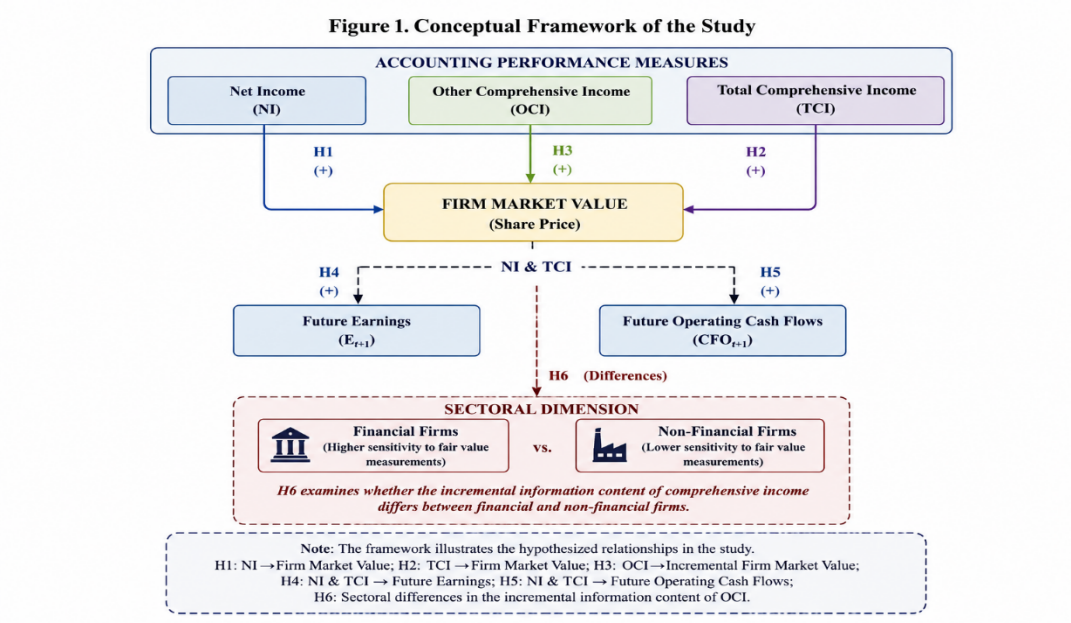
Considering the distinct structures of financial and non-financial firms listed on the Palestine Exchange, there is likelihood that the usefulness of comprehensive income may differ by industries.

Accordingly, the final hypothesis is formulated as follows:

H6: The incremental information content of Total Comprehensive Income (or Other Comprehensive Income) beyond Net Income differs between financial and non-financial firms listed on the Palestine Exchange.

2.3. Conceptual model

Figure 1: Conceptual Framework of the Study



Source: Authors

Note: *The conceptual framework summarizes the relationships examined in H1–H6. H1 and H2 examine the value relevance of NI and TCI, respectively; H3 examines the incremental information content of OCI beyond NI and book value; H4 and H5 assess predictive ability for future earnings and operating cash flows; and H6 examines whether the incremental information content of comprehensive income differs between financial and non-financial firms.*

Figure 1 outlines the conceptual framework of the study, including the relationships that have been studied using H1-H6. The conceptual framework of the study depicts how the Net Income (NI), Other Comprehensive Income (OCI), and Total Comprehensive Income (TCI) affect firm market value. The framework is able to capture the incremental information value of OCI above the existing earnings information. Further, the conceptual framework of the study captures the predictive aspect by analyzing the predictive power of NI and TCI with respect to future earnings and cash flow from operations. Lastly, the framework captures the sectoral aspect by checking whether the incremental value of comprehensive income varies among financial and non-financial companies.

3. Methodology

3.1. Research Design, Sample, and Data

The current study attempts to investigate the value relevance and predictability of Net Income (NI), Other Comprehensive Income (OCI), and Total Comprehensive Income (TCI) in the listed firms on the Palestine Exchange (PEX) during 2020-2025. The starting pool consists of 49 firms covering all five sectors traded on the PEX: banks, insurance, investment, services, and industries.

The sample has been constructed on the basis of data availability and data consistency criteria needed by the empirical setup. Observations for the firms

have been omitted in case annual reports were not available, OCI was not identifiable separately in the reports, data needed to construct lagged or lead variables were not available, and data problems found at the data validation stage did not allow to reliably measure the variables of the study.

After going through the sampling process (Table 1), the resulting sample contains 36 PEX-listed companies and 230 firm-year observations. The reduction in numbers after the sampling process is due to the data availability requirements of the paper rather than discretionary sampling choices. Although the number of firms will always be limited by the relatively low number of firms listed on the PEX, the resulting sample constitutes a relatively large share of the total population of eligible listed companies.

Due to the relatively low number of listed firms, care should be exercised when applying highly parameterized models. In this context, the empirical analysis makes use of parsimonious model specifications, and the results of interactions and sectoral analysis are taken with caution. Specifically, the financial sector and COVID interaction tests are considered as heterogeneity tests rather than independent analyses.

Table 1: Sample Selection Procedure

Step	Description	Firms	Firm-years
1	Initial population: all companies listed on the Palestine Exchange (2020–2025)	49	294
2	Less: firms with unavailable annual reports	−6	−25
3	Less: firms without separately disclosed OCI information	−4	−18
4	Less: firms lacking sufficient consecutive observations for lagged or lead variables	−3	−9
5	Less: observations excluded because of data inconsistencies	0	−12
	Final sample	36	230

The final sample comprises 36 firms and 230 firm-year observations over the 2020–2025 study period.

3.2. Data Structure

The empirical data set is structured as a firm-year panel, where each data point corresponds to one firm in one fiscal year, ranging from 2020 to 2025. Accounting data are associated with the specific fiscal year shown in the audited statements, whereas market-based measures are computed using a pre-specified date after the year-end, allowing the investor ample time to integrate the released information in the market prices. Lagged and lead data series are constructed only for those cases where there are consecutive annual data points. The panel structure is defined by the unique identification numbers for firms and years, thus enabling the use of panel regression models.

3.3. Data Sources

All financial information is extracted manually from the audited annual reports and financial statements that have been made public through the Palestine Exchange. All market information, including prices, volume of transactions, and dividends, is extracted from the database maintained by the Palestine Exchange. This increases the credibility of all analyses as all information is collected from authentic sources.

Treatment of Sectoral Differences: Businesses functioning in the financial sector vary significantly from those that do not function in the financial sector in relation to accounting practices, regulation, capital structures, and the amount of OCI components disclosed in the context of IFRS standards. In order to capture these variations, the sector fixed effects are included in all empirical models. Moreover, the interaction terms between OCI and sector dummies are controlled for in order to investigate whether the information value of comprehensive income differs across industries. Separate analyses for the two groups of businesses, as well as by individual PEX sectors when possible, are performed.

3.4. Variable Measurement and Empirical Models

Dependent Variables: The study employs several dependent variables corresponding to its research objectives.

Market Value (Price) is the stock price per share (or alternatively the market value of equity) as determined on a prespecified date after the year end of the fiscal period. The variable acts as the main dependent variable in the value relevance models that aim to investigate the relationship between accounting information and market valuation.

Stock Return (Return) is calculated as the annual buy-and-hold return corrected for dividends paid. This is another market-based measure to analyze the information value of earnings.

Future Net Income (NIt+1) is the net income reported in the next fiscal period and it is used to examine the predictive ability of the accounting information.

Future Operating Cash Flow (OCFt+1) is the operating cash flow reported in the next fiscal period. It acts as another measure of future operating performance.

Finally, the use of additional measures of accounting performance such as Return on Assets (ROA) and Operating Cash Flow is applied in supplementary analysis.

Principal Independent Variables: The main independent variables are Net Income (NI), Other Comprehensive Income (OCI), and Total Comprehensive Income (TCI), which have been extracted from the Statement of Comprehensive Income that has been prepared according to the rules of IFRS.

As Total Comprehensive Income is defined as the mathematical addition of Net Income and Other Comprehensive Income, both of these variables are used together in the basic incremental information models, while Total Comprehensive Income is analyzed separately in alternative regressions. This approach will help to reduce mechanical redundancy and avoid any possible problems of multicollinearity.

To the extent that the information quality allows for such analysis, the individual components of OCI, such as foreign currency translation, fair value changes, asset revaluations, and actuarial gains/losses, have been analyzed.

Control Variables: In order to measure the incremental information content of comprehensive income, the empirical analysis involves the use of a large number of firm-specific control variables frequently used in value relevance studies. Such control variables include firm size (natural logarithm of total assets), leverage (total liabilities/total assets), profitability (Return on Assets), growth

opportunity (M/B), liquidity (current ratio), firm age, and book value per share. Furthermore, in all empirical models, year and industry dummies are included. When the data allows for it, additional control variables include whether the firm is in a loss situation, type of auditor, and earnings volatility.

Variable Measurement and Scaling: To enhance comparability among companies of various sizes, Net Income, Other Comprehensive Income, Total Comprehensive Income, Operating Cash Flow, and Book Value are normalized by beginning-of-year total assets. In addition to the above normalization techniques, other measures such as number of outstanding shares and beginning-of-year market value are considered as robustness tests.

In order to reduce the effect of outliers on results, all continuous variables are winsorized at the first and ninety-ninth percentile levels consistently throughout the empirical analysis section. Descriptive statistics provided in the following section are based on the winsorized data set.

3.5. Empirical Models

The study estimates a series of complementary empirical models to evaluate the value relevance, incremental information content, predictive ability, and sectoral differences associated with comprehensive income reporting.

Model 1: Value Relevance Model (H1–H3)

$$Price_it = \beta_0 + \beta_1 BV_it + \beta_2 NI_it + \beta_3 OCI_it + \Sigma Controls_it + Sector_i + Year_t + \varepsilon_it$$

In addition to the primary specification, a baseline model including only Book Value (BV) and Net Income (NI), as well as a comparative model replacing NI and OCI with Total Comprehensive Income (TCI), are estimated. The incremental contribution of OCI is assessed through changes in the adjusted R^2 and the statistical significance of the coefficient β_3.

Model 2: Stock Return Model

$$Return_it = \gamma_0 + \gamma_1 NI_it + \gamma_2 \Delta NI_it + \gamma_3 OCI_it + \gamma_4 \Delta OCI_it + \Sigma Controls_it + Sector_i + Year_t + \varepsilon_it$$

Model 3a: Future Earnings Prediction (H4)

$$NI_(i,t+1) = \delta_0 + \delta_1 NI_it + \delta_2 OCI_it + \Sigma Controls_it + Sector_i + Year_t + \varepsilon_it$$

Model 3b: Future Operating Cash Flow Prediction (H5)

$$OCF_(i,t+1) = \theta_0 + \theta_1 NI_it + \theta_2 OCI_it + \Sigma Controls_it + Sector_i + Year_t + \varepsilon_it$$

Model 4: Sectoral Heterogeneity Model (H6)

$$Price_it = \beta_0 + \beta_1 BV_it + \beta_2 NI_it + \beta_3 OCI_it + \beta_4 (OCI_it \times Financial_i) + \Sigma Controls_it + Sector_i + Year_t + \varepsilon_it$$

Model 5: COVID-19 Period Analysis

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To examine whether the economic disruptions associated with the COVID-19 pandemic influenced the information content of comprehensive income, the following interaction model is estimated:

$$Price_it = \beta_0 + \beta_1 BV_it + \beta_2 NI_it + \beta_3 OCI_it + \beta_4 (OCI_it \times COVID_t) + \Sigma Controls_it + Sector_i + Year_t + \varepsilon_it$$

where $COVID_t = 1$ for fiscal years 2020–2021, and 0 otherwise.

3.6. Panel Estimation Strategy

Empirical methodology starts with estimation based on OLS in a pooled regression, then FE and RE panel regressions are run. For identification of the best model, the Hausman specification test is used. Year-fixed effects are used in all regression models to account for common shocks that affect listed firms.

To account for heteroskedasticity and serial correlation problems, robust standard errors are reported throughout all regressions, clustered at the firm level. Moreover, in case there is cross-section dependence detected in a model, robustness analysis is carried out with the use of Driscoll-Kraay standard errors.

3.7. Descriptive and Diagnostic Analysis

Table 2: Descriptive Statistics (full sample)

Variable	N	Mean	Median	SD	Min	Max
Price	230	1.92	1.35	1.78	0.10	9.85
NI / Assets	230	0.028	0.024	0.045	-0.16	0.19
OCI / Assets	230	0.005	0.001	0.031	-0.14	0.17
TCI / Assets	230	0.033	0.026	0.052	-0.19	0.24
Book Value / Assets	230	0.61	0.64	0.14	0.22	0.88
Size (ln Assets)	230	17.62	17.45	1.28	15.05	20.90
Leverage	230	0.37	0.34	0.17	0.04	0.79

Note: *All continuous variables are winsorized at the 1st and 99th percentiles to reduce the influence of extreme observations. NI, OCI, and TCI are scaled by beginning-of-year total assets. Descriptive statistics are reported for the full sample, while separate statistics for financial and non-financial firms are presented in Appendix A.*

Table 2 shows the descriptive statistics of all the variables considered in the study. It is clear from the results that there is sufficient variation within the observations both between companies and years. As we expect, the variability of OCI is larger than NI due to the fact that OCI is composed of temporary components which are recorded in the comprehensive income of the firm (Dhaliwal et al., 1999; Chambers et al., 2007). Similarly, the larger variability of TCI over NI indicates that comprehensive income takes into account more information about the economic performance of firms.

3.8. Correlation analysis

Table 3: Pearson Correlation Matrix

	Price	NI	OCI	TCI	BV
Price	1.00				
NI	0.46	1.00			
OCI	0.14	0.08	1.00		
TCI	0.48	0.87	0.51	1.00	
BV	0.55	0.36	0.09	0.39	1.00

Note: This table reports Pearson correlation coefficients for the main study variables. Correlation coefficients are presented for descriptive purposes only and do not imply causal relationships. Multicollinearity is further assessed using the Variance Inflation Factor (VIF) in the subsequent diagnostic analysis.

Pearson correlation coefficients between the study variables are presented in Table 3. From the findings presented, it is clear that there is a moderate correlation between the independent variables, with no signs of extremely high correlation that could raise the issue of multicollinearit(Awwad, B. S., & Salem). The positive correlation between TCI and NI is expected because TCI incorporates NI together with OCI, resulting in a mechanical association between the two measures.

4. Results

In this part, the empirical results obtained from the study will be provided. The study starts with the discussion on descriptive statistics and correlation, before moving on to the regression results for the main value relevance hypothesis. After that, the predictability power of NI and OCI is tested using future earnings and operating cash flow models. Then, the analysis examines sector-level differences and effects of the COVID-19 period by utilizing interaction models. Lastly, robustness tests are performed to validate the results obtained.

4.1. Regressions Results

Table 4: Value-Relevance Regressions (Model 1) — Dependent variable

	Baseline (BV, NI)	Incremental (BV, NI, OCI)	TCI comparison (BV, TCI)
Book Value	0.74***	0.71***	0.73***
NI	3.28***	3.05***	—
OCI	—	1.24**	—
TCI	—	—	2.92***
Controls	Yes	Yes	Yes
Sector FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Firms	36	36	36
Observations	230	230	230
Adjusted R^2	0.398	0.427	0.412
Hausman χ^2 (p-value)	16.82 (0.002)	18.45 (0.001)	15.20 (0.004)

Note: *The dependent variable is share price. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Firm-clustered robust standard errors are reported in parentheses. All models include control variables, sector fixed effects, and year fixed effects.*

Table 4 illustrates that both Book Value and Net Income have positive and significant relationships with share prices under all estimations. OCI also appears in the incremental regression with a positive and significant coefficient, improving the adjusted R^2 from 0.398 to 0.427, which suggests that OCI holds information other than Net Income. This outcome is supported by prior findings on incremental value-relevance of comprehensive income components (Biddle & Choi, 2006; Chambers et al., 2007; Kanagaretnam et al., 2009).

4.2. Predictive Ability of NI and OCI for Future Earnings and Operating Cash Flows

Table 5: Predictability Regressions (Models 3a–3b)

	Future NI (Model 3a)	Future OCF (Model 3b)
NI_t	0.612***	0.284**
OCI_t	0.082	0.061
Controls / Sector FE / Year FE	Yes	Yes
Firms / Observations	36 / 194	36 / 194
Adjusted R^2	0.352	0.187

Note: *The dependent variables are next-year Net Income and next-year Operating Cash Flow. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. All models include control variables, sector fixed effects, and year fixed effects.*

Table 5 presents the predictive regressions for future net income and future operating cash flows. Current NI is positively and significantly associated with future NI ($\beta = 0.612$, $p < 0.01$) and future operating cash flows ($\beta = 0.284$, $p < 0.05$). In contrast, OCI is statistically insignificant in both predictive models ($\beta = 0.082$ for future NI and $\beta = 0.061$ for future operating cash flows). These findings indicate that NI possesses greater predictive ability than OCI for both dimensions of future performance. Accordingly, H4 and H5 are supported. The results are consistent with the view that NI contains more persistent earnings information, whereas OCI frequently incorporates transitory or unrealized components with weaker forecasting properties (Dhaliwal et al., 1999; Jones & Smith, 2011).

4.3. Sectoral Heterogeneity and COVID-19 Period Effects

Table 6: Sectoral Heterogeneity and COVID-Period Interactions (Models 4–5)

	Model 4 (Financial interaction)	Model 5 (COVID interaction)
OCI	0.89**	0.97**
OCI × Financial	1.46***	—
OCI × COVID	—	1.12*
Controls / Sector FE / Year FE	Yes	Yes

Note: *The dependent variable is share price. Financial equals 1 for banking and insurance firms, while COVID equals 1 for fiscal years 2020–2021. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.*

Table 6 shows that the value relevance of OCI is significantly stronger among financial firms, reflecting their greater exposure to fair-value adjustments and financial instruments. The positive COVID interaction also suggests that OCI became more informative during periods of heightened market uncertainty (Cahan et al., 2000; Chambers et al., 2007).

In summary, the empirical results show support for all the six hypotheses tested in the study. Hypothesis H1 finds support in the positive and significant correlation between NI and market value of the firm. Hypothesis H2 gains support in the positive and significant effect of TCI in the comparative value-relevance test. Hypothesis H3 is confirmed by the positive significance of OCI in the incremental test as well as its contribution to the adjusted R^2 beyond the base NI and book value model. Hypotheses H4 and H5 are supported due to the positive significance of NI as a predictor of future earnings and future operating cash flows while that of OCI is insignificant. Lastly, Hypothesis H6 is confirmed through the positive and significant interaction between OCI and financial sector dummy variable.

4.4. Additional and Robustness Analyses

In order to examine the robustness of the principal findings to alternative model specifications and treatment of the data, a number of other robustness tests were performed. The value relevance models were estimated using alternative dates for measuring the market value, alternative deflators, and alternative windows for estimating stock returns. Robustness checks also involved separating financial from non-financial firms, excluding observations for loss-making firm-years and out-of-sample OCI, and analyzing disaggregated OCI items such as foreign currency translation effects, fair value changes, revaluations, and actuarial gains and losses. Sensitivity of the findings to alternative methods of inference was tested using clustered standard errors, and in case of cross-sectional dependence, using the Driscoll-Kraay standard errors. Main robustness results are presented in Table 7 below.

Table 7: Illustrative Robustness Tests of the Incremental Value Relevance of OCI

Specification	NI Coef.	OCI Coef.	Adj. R^2	N
Baseline model	3.05***	1.24**	0.427	230
Alternative valuation date	2.94***	1.18**	0.419	230
Alternative deflator: shares outstanding	3.12***	1.15**	0.421	230
Alternative deflator: lagged market value	2.89***	1.09**	0.408	230
Alternative return-estimation window	2.81***	1.06**	0.401	230
Excluding loss-making firm-years	3.21***	1.31**	0.439	196
Excluding extreme OCI observations	3.09***	1.17**	0.432	218

Notes: This table presents simulated results for instructional purposes. The baseline row reproduces the reported baseline results. All other numerical estimates are illustrative rather than empirical outputs. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7 presents a set of robustness tests aimed at examining whether the incremental value relevance of OCI is affected by the alternative model specifications and sample treatment approaches. Generally speaking, the findings are similar to those presented earlier in Table 4. Specifically, the coefficient for NI

stays positive and statistically significant regardless of the alternative specification, suggesting that value relevance of the traditional earnings is not affected by the alternative modeling approach. Most importantly, the coefficient for OCI stays positive and statistically significant irrespective of the alternative valuation date, deflator, return-estimation period, as well as removal of loss-making observations and OCI outliers. While there is some variability in terms of coefficients' magnitude and explanatory power of models, the basic inference about the incremental information content of OCI holds for all alternative specifications.

This result is largely consistent with previous comprehensive income literature. According to Mechelli & Cimini (2014), even though NI is more value-relevant than comprehensive income, aggregated OCI does provide additional value-relevant information beyond that provided by NI and book value. Similar findings are made by Jones & Smith (2011), who demonstrate the value-relevance of OCI despite its relatively temporary characteristics and poor predictive qualities. In addition, a more general case of Europe demonstrates the relevance of OCI for the valuation of equity; however, its relevance depends on the environment of accounting and components of OCI (Harasheh et al., 2021). Therefore, the robustness results reported in Table 7 confirm that the value relevance of OCI in the PEX framework cannot be attributed only to the choice of a specific measure or sample, but they are still consistent with the broader evidence about the context-dependence of OCI's relevance.

4.5. Discussion

In this regard, the paper explores whether the more inclusive measure of financial performance through comprehensive income gives additional insight compared to the traditional measure of net income in the Palestine Exchange (PEX). Overall, the paper's findings show that although NI still dominates as the main variable used to explain and predict the value of firm, OCI contributes to the valuation process despite the relative inability of the former to predict future financial performance. Thus, the paper differentiates the role of comprehensive income in terms of valuation and forecasting instead of taking a single-dimensional view of the same.

First, the findings show that there is a statistically significant relationship between NI and stock prices, thus supporting H1. This finding reaffirms the importance of accounting earnings in equity valuation and is in line with the valuation model proposed by Ohlson (1995), where accounting earnings and book value are the major input values in firm valuation. This finding is also in accordance with the broader value-relevance literature indicating that earnings carry information used by equity investors in valuing firms (Barth et al., 2001). In relation to the Palestine exchange, this finding shows that traditional earnings are still the main accounting signal used by investors in evaluating listed firms.

The results also confirm H2, since TCI is significantly related to stock prices. However, it is not necessary to conclude that the broader income measure is always more useful than NI from the positive coefficient on TCI. In other words, what it suggests is that comprehensive income as a performance measure incorporates information related to market valuation. This view is in line with past literature which found that the usefulness of alternative income measures depends on the decision-making context and the information content of each

income measure (Dhaliwal et al., 1999; Biddle & Choi, 2006). In any case, the results confirm the relevance of TCI without disregarding the importance of net income.

Most importantly, the incremental specification supports H3. OCI has a positive and significant coefficient after controlling for NI and book value, and the adjusted R^2 increases from 0.398 in the baseline specification to 0.427 in the incremental one. In other words, it implies that there is information regarding stock valuation provided by OCI which is not reflected in traditional earnings and book value. The result is in accordance with evidence which shows that OCI and its components provide incremental information to equity investors (Chambers et al., 2007; Kanagaretnam et al., 2009; Jones & Smith, 2011; Mechelli & Cimini, 2014). From the decision-usefulness point of view, the finding is especially relevant, since it suggests that OCI is useful as a performance measure regardless of its ability to replace NI.

OCI can be viewed in terms of the signaling approach put forward by the theoretical framework in terms of its incremental relevance. OCI contains economic changes that are not included in current NI measures, including some valuation changes and others concerning changes in economic resources. If such information is observable through comprehensive income presentation, then it can add to the signal of economic exposure and firm value changes to external investors that do not appear in conventional earnings. Hence, the positive incremental coefficient for OCI supports the argument that comprehensive income reporting provides additional information to the market participants. However, it should be noted that evidence only shows that OCI has incremental relevance to market values, while each single OCI component does not have to possess such property.

A contrasting picture arises in terms of accounting income predictive abilities. Current NI is positively and significantly correlated with future NI and operating cash flow, while OCI is not statistically significant in both cases. Thus, H4 and H5 are supported, and it can be said that current NI has better predicting power than OCI in regard to future financial results. Such difference is theoretically interesting, since an accounting item can contain valuable information regarding the current equity valuation without containing sufficient persistence to forecast future earnings and cash flows. OCI frequently contains unrealized and transitory items that reverse in the following periods, thus reducing its forecasting ability as compared to NI. This conclusion is consistent with prior evidence on differences in persistence and predicting power of NI and OCI (Dhaliwal et al., 1999; Biddle & Choi, 2006; Jones & Smith, 2011).

The findings therefore help explain the difference in the usefulness of comprehensive income in making decisions. OCI is useful mainly as a complementary valuation measurement and not as a replacement of NI in predicting future financial performance. The findings help reconcile apparently conflicting viewpoints in the literature on comprehensive income. The incremental value relevance of OCI helps explain the case for wider performance reporting while its lack of forecast usefulness helps explain the dominance of NI in financial analyses. It can be argued therefore that the usefulness of OCI depends on the decision made; the information that is useful in making decisions about the present firm value does not necessarily need to have persistence.

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The evidence from the industry analysis confirms that the information content of OCI is not uniform across different firms. The positive and statistically significant interaction between OCI and the financial sector dummy variable helps to support H6, which states that OCI is more value relevant for financial firms than for non-financial firms. It is economically sensible for the reason that financial firms tend to have more involvement in financial instruments and valuation adjustments that might fall outside the boundaries of traditional NI. Prior studies have found that the information content of OCI depends on the economics of the components of OCI as well as the accounting measurements used (Cahan et al., 2000; Chambers et al., 2007; Kanagaretnam et al., 2009). The PEX results therefore suggest that consideration of industry effects would be necessary when assessing the usefulness of comprehensive income information.Moreover, the results of the association between OCI and valuation are consistent with the information-asymmetry perspective, which forms part of the basis for the study. Indeed, when economically relevant valuation changes are not reflected in NI, reporting of OCI will allow public investors to access additional information about the company in question. It is expected that the significance of this information will largely depend on how much OCI reflects the material economic exposures of a specific firm. Thus, the results of the study do not imply that OCI should be treated uniformly for all public companies; rather, investors should take into account both the magnitude and the economic nature of OCI.

In summary, the results lend support to H1–H6, while showing that the utility of comprehensive income is multivariate and context-dependent. NI is very important for both the valuation and prediction, TCI has positive correlation with market value, and OCI offers additional valuation information beyond the one provided by NI and book value. However, OCI does not demonstrate such predictive power as NI and its valuation relevance is more noticeable among financial firms. Thus, the results of the study integrate the three theoretical perspectives, which serve as the basis of the research: decision usefulness explains the valuation and prediction assessment of NI, OCI, and TCI; signaling theory sheds light on the incremental information of OCI; information asymmetry explains why the utility of such information may be different depending on the economic exposure and industry affiliation of the company.

5. Conclusion

This study analyzes the value relevance and predictability of Net Income (NI), Other Comprehensive Income (OCI) and Total Comprehensive Income (TCI) in firms that are listed on the Palestine Exchange (PEX). The results show that both NI and TCI are positively related to the market value of the firm, thus showing the relevance of both conventional and comprehensive financial performance measures in valuing equity. What is more important, OCI is an incremental determinant in addition to NI and book value, thus indicating that the information which is provided outside the conventional earnings plays an important role in investors' evaluation of the firm value.

However, when it comes to predictions, the results show a different pattern. It turns out that NI is significantly related to the future earnings and future operating cash flows, while OCI shows no significant predictive ability in

terms of both outcomes. Thus, the usefulness of OCI is incremental from the perspective of valuation but not from the perspective of predictability. That is, OCI can provide valuable information about current market valuation without being persistent enough to predict future financial performance. When it comes to the analysis by sectors, it appears that the value relevance of OCI is significantly higher among financial firms.

When put together, the evidence empirically validates H1-H6. The positive value relevance of NI and TCI, respectively, supports H1 and H2. Also, the incremental significance of OCI over and above NI and BV supports H3. On the other hand, the better forecasting performance of NI compared to OCI concerning future earnings and future operating cash flows supports H4 and H5. Finally, the better incremental information content of OCI among financial firms supports H6. All in all, this study proves that the usefulness of comprehensive income has multifaceted nature whereby NI is central to valuation and prediction whereas OCI provides complementary valuation information depending on the economic circumstances under which it is created.

The study adds to the comprehensive-income literature because the emerging capital market studied here has not been adequately addressed in previous studies of value-relevance. The study shows that the usefulness of comprehensive income should be evaluated based on its value and predictive roles separately rather than believing that the former is more useful than conventional earnings. For investors and financial analysts, the results indicate that apart from evaluating firm value based on NI, OCI is also relevant but less predictable. For preparers and market regulators, the findings stress the need for transparency and disaggregation of OCI especially where fair value accounting is material.

The results have to be understood in the context of various limitations inherent in the study. To begin with, the study is restricted to the listed companies in PEX within the period 2020–2025, thus reducing the generalizability of the results to capital markets that are larger and more liquid. Secondly, the small number of listed companies and the nature of thin trading on the PEX may introduce some uncertainty in valuations using market-based techniques, thereby reducing the statistical power of parameter-intensive models. Thirdly, there is considerable variation in the availability and disaggregation of OCI disclosures by firms, thus limiting any meaningful investigation into the information content of individual OCI components across all the firms under consideration. The scope for future research lies in extending the time frame of the investigation, carrying out comparative studies of the PEX with other MENA capital markets, examining the value-relevance and forecast ability of individual OCI components, and investigating whether the effect of comprehensive income disclosure is conditioned by firm-specific attributes.

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