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The Relative Ability Of Net Income, Comprehensive Income and its Components in Predicting Future Cash Flows, Net Income and Comprehensive Income
An Empirical Comparative Study on Firms Iisted in The Egyptian Stock Exchange

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Abstract

This study aims to examine the relative ability of net income, comprehensive income and its components in predicting cash flows, net income and comprehensive income for future periods. In addition, it examines the predictive ability of the individual components of other comprehensive income over and above net income versus other comprehensive income in aggregate to predict cash flows, net income and comprehensive income for future periods. The study is conducted on those companies listed in the Egyptian stock market in compliance with the Egyptian Accounting Standard No.1 "Presentation of Financial Statements" issued in 2015 that made the preparation of a separate statement on comprehensive income mandatory starting from the fiscal year 2016. Actual reported data obtained from the quarterly financial statements issued by listed firms for the years 2016 and 2017 were used resulting in 400 quarter observations for all sectors of the economy except banks and insurance companies. Data were analyzed using multiple regression analysis where the adjusted R^2 was used to compare the predictive power of each of two corresponding models. Results did not provide conclusive evidence for the superiority of comprehensive income over net income in predicting cash flows, net income and comprehensive income for one future period as the predictive ability of both of them was approximately the same. Results also indicated that the individual components of other comprehensive did not help in improving the predictive power of firms' future performance compared to the aggregate figure of other comprehensive income taken asawhole. Both measures of other comprehensive income whether detailed or aggregate provided approximately the same predictive power with respect to cash flows, net income and comprehensive income for one future period.

Key words: Net income, comprehensive income, predictive power, other comprehensive income, cash flows

المقدرة النسبية لصافي الدخل والدخل الشامل ومكوناته في التنبؤ بالتدفقات النقدية المستقبلية وصافي الدخل والدخل الشامل

دراسة تجريبية مقارنة علي الشركات المسجلة في سوق البورصة المصرية

ملخص البحث

تهدف هذه الدراسة إلي إختبار المقدرة النسبية لكل من صافي الدخل والدخل الشامل علي التنبؤ بالتدفقات النقدية، وصافي الدخل والدخل الشامل، لفترة مستقبلية. كما تهدف إلي دراسة المقدرة التنبؤية لمكونات الدخل الشامل الآخر في التنبؤ بالتدفقات النقدية، صافي الدخل والدخل الشامل لفترة مستقبلية مقارنة بالدخل الشامل الآخر ككل. وسيتم تحقيق هذه الأهداف باستخدام عينة من الشركات المقيدة بالبورصة المصرية والتي تطبق معيار المحاسبة المصري رقم ١"عرض القوائم المالية" المصدر لعام ٢٠١٥ والذي تقوم الشركات بموجبه باعداد قائمة منفصلة للدخل الشامل اعتبارا من السنة المالية ٢٠١٦ والتي تبدأ بصافي الدخل ثم تعرض عناصر الدخل الشامل الآخر وتنتهي برقم الدخل الشامل. وقد اعتمدت الدراسة علي البيانات الفعلية للشركات والتي تم استخراجها من القوائم المالية ربع السنوية للشركات المقيدة في البورصة المصرية للسنتين ٢٠١٦ و٢٠١٧ والذي نتج عنه ٤٠٠ مشاهدة من القطاعات الاقتصادية المختلفة بدون البنوك وشركات التأمين، وذلك لاختلاف الأرقام والنسب الخاصة بهما عن باقي القطاعات. وقد تم تحليل البيانات باستخدام تحليل الإنحدار الخطي والذي أمكن من خلاله مقارنة المقدرة التنبؤية لكل نموذج بنظيره باستخدام معامل التحديد المعدل $adj\ R^2$.ولم تستطع النتائج أن تقدم أدلة قاطعة علي تفوق المقدرة التنبؤية للدخل الشامل عن صافي الدخل من حيث التنبؤ بالتدفقات النقدية وصافي الدخل والدخل الشامل لفترة مستقبلية وذلك نظرا للتقارب قيمة R^2 لكل نموذج ونظيره. ويمكن أن تعزي هذه النتيجة إلي انخفاض قيمة عناصر الدخل الشامل مما يعمل علي تقارب قيم المقياسين. كما أوضحت النتائج أن الإفصاح عن عناصر الدخل الشامل الآخر بشكل مجمع إلي جانب صافي الدخل لم يساهم في تحسن المقدرة التنبؤية لأداء الشركة في المستقبل مقارنة بالإفصاح عن تلك المكونات منفردة، مما يعكس بدوره انعدام المقدرة النسبية لعناصر الدخل الشامل الآخر مفصلة مقارنة بالدخل الشامل ككل في التنبؤ بالتدفقات النقدية وصافي الدخل والدخل الشامل لفترة مستقبلية

الكلمات الدالة: صافي الدخل، الدخل الشامل، الدخل الشامل الآخر، القدرة التنبؤية ، التدفقات النقدية

1. Introduction

The issuance of financial statements is the last step in the accounting cycle through which the income statement is disclosed that provides information about firm's operations and investments to stockholders and creditors with the objective of helping them in making their economic decisions (Saeedi 2008).The reporting of information about income is one of the most vital sources of information to financial statements' users (Bataineh and Rababah 2016). Net income has always been accepted as a key indicator for the company's financial performance till the recent changes in the accounting regulating standards which introduced the concept of comprehensive income to the accounting community as an essential measure of the firm's performance (Praulins and Bratka 2012). Comprehensive income differs conceptually from net income as the latter clearly indicates the results of the entity's current financial performance. However, comprehensive income which equals net income plus other comprehensive income reports information about potential income and cash flows that might be generated from transactions in the future (Du et al. 2014).

Accordingly, the usefulness of presenting comprehensive income versus net income in providing decision makers with useful information has been the research focus of many empirical and experimental studies (Hirst and Hopkins 1998, Dhaliwal et al. 1999, Choi et al. 2007, Biddle and Choi 2006, Choi and Zang 2006, Wang 2006, Goncharov and Hodgson (2008), Saeedi 2008, Kanagaretnam et al 2009) introducing lots of controversy concerning the superiority of comprehensive income over net income as an indicator of firm's performance and the predictive ability of each measure concerning stock returns and cash flows (Praulins and Bratka 2012).

Such a flow of literature has been accompanied by movements on the part of professional organizations in an attempt to find the best presentation format of comprehensive income and its components in a way that can best help financial statements' users in their decision making process concerning related companies. The FASB has been adopting an "all inclusive income approach" through which all recurring and non recurring components of income should be disclosed in the income statement before transferring the firm's net results of operations to the stockholder's equity section in the statement of financial position.

From this point of view, comprehensive income can be defined as a measure of all changes in firm's equity due to transactions and other economic events recognized by the firm for the period rather than those transactions with owners of the firm (Acar and Karacaer 2017). Accordingly, it had been mandatory for firms to distinctly disclose comprehensive income as a separate line item in the firm's financial statements starting from the fiscal year 1997 in compliance with SFAS 130 where as firms are granted the option to report comprehensive income either as part of the income statement or in the statement of changes in equity. For companies listed with the European Union, the disclosure of comprehensive income and its components has become mandatory in accordance to IAS 1 in the fiscal year 2007 which provided firms with the choice of reporting profits and losses and other comprehensive income in two separate but consecutive statements (profit and loss statement and comprehensive or one single combined statement (Acar and Karacaer 2017).

The ongoing debate that never ended was to whether report income on a comprehensive clean surplus basis or based on net income from core operations and results from non operating transactions (dirty surplus flows) are recorded as reserves. Later the FASB dropped the option of disclosing comprehensive income in the owner's equity statement to converge with the IASB. In 2015, the Egyptian Accounting standard was issued requiring firms to report comprehensive income data in a separate statement in addition to the income statement based on the argument that the one statement format for net income and comprehensive income presentation might bury net income data within comprehensive income which becomes the bottom line of the statement. This may direct investors' attention away from net income which in this case is just a subtotal in the combined statement and in turn might affect the decisions made by nonprofessional decision makers concerning the entity's performance (Du et al. 2014).

This study contributes to existing literature in two ways. First, several studies on comprehensive income have been performed using US GAAP and IFRS for companies working in advanced economies as in the USA and Europe (Nejad and Ahmad 2017) however, studies on companies operating in emerging economies are few. This point is especially relevant with respect to the other comprehensive income components related to the market efficiency and its consequent effect

on adjustments in available for sale financial instruments and revaluation surplus of property, plant and equipment (Nejad and Ahmad 2017) especially for firms working in developing markets as Egypt which lacks efficiency in its stock market.

Second this study contributes to research on comprehensive income as it uses "actual data" in contrast to prior research that had tended to use "as-if-data" methodology (Acar and Karacaer 2017). Prior research concerned with studying the predictive power of net income versus comprehensive income used "as if" constructed data rather than reported data as (Dhaliwal et al. 1999 and Goncharov and Hodgson 2011). Even those studies that depended on actual reported data as Kanagaretnam et al. (2009) relied on small samples (Khan 2012) resulting in an inconclusive evidence which requires to be further studied.

Accordingly, this study is conducted using actual data extracted from the financial statements of public companies listed in the Egyptian Stock market in compliance with the Modified Egyptian Accounting Standard No.1 "Financial Statement Presentation" issued by the ministry of investment in 2015 and to be applied by companies listed in the Egyptian stock exchange starting from the fiscal year 2016. This standard required that companies must issue two separate financial statements to disclose their performance; the first is the income statement which summarizes the companies' profits and losses and the other is the comprehensive income statement which starts by net income calculated from the first statement and presents the elements of other comprehensive income. This in turn would allow the researcher to work on actual reported data obtained from the quarterly financial statements issued by listed firms for the years 2016 and 2017 in compliance with the aforementioned standard.

2. Research Questions

This research addresses the usefulness of comprehensive income compared to net income by examining the relative power of each of comprehensive income and net income in predicting future cash flows, net income and comprehensive income for companies listed in the Egyptian Stock market using reported data from the comprehensive income statements of those companies in order to investigate the usefulness of the Egyptian Accounting Standard No. 1 "Presentation of Financial Statements" in helping investors and creditors in predicting

cash flows and income measures. Accordingly, the study aims to answer the following two main questions:

Q1: Does comprehensive income have a superior power in predicting future cash flows, future net income and future comprehensive income relative to net income for companies listed in the Egyptian Stock exchange?

Q2: Do the individual components of other comprehensive income have a superior power in predicting future cash flows, net income and comprehensive income relative to aggregate other comprehensive income for companies listed in the Egyptian Stock exchange?

3. Research Objectives and Importance

This study aims to examine the relative ability of net income, comprehensive income and its respective components to predict cash flows, net income and comprehensive income for future periods for companies listed in the Egyptian stock in compliance with the Egyptian Accounting Standard No.1 "Presentation of Financial Statements" which made the preparation of a separate statement on comprehensive income mandatory. Results of the study could be beneficial to Egyptian standard setters to help them decide whether the statement on comprehensive income has an information content that could help users in predicting cash flows and income measures in future periods. The study also aims to examine the relative ability of the individual components of other comprehensive income relative to other comprehensive income in aggregate over and above net income to predict future cash flows, future net income and future comprehensive income.

4. Research Limitations

The study is not without limitations; First of all, the study focused on examining the relative usefulness of net income and comprehensive income and its components with respect to their predictive power for firm's future cash flows and earnings; studies concerned with comparing the usefulness of net income versus comprehensive income with regard to their relevance and explanatory power for changes in the market prices of the firms and the underlying effect on investors' judgments are out of the scope of the study. Second, the study was conducted on all sectors of the economy except banks and insurance companies. This is due to the unique nature of these institutions that need to be separately studied. Third, data used in the study were extracted from quarterly - financial statements because the study was

limited by the period following the issuance of the accounting standard (all of 2016 and the first three quarters of 2017 as firms do not issue quarter reports for the last quarter of each year) to examine the effect of compliance with the standard's requirements; annual financial statements are out of the scope of the study as depending on annual reports would not provide the data sufficient to examine the study variables. Finally, results of the study are limited to the control variables being mentioned such as book to market ratio, leverage, firm size and dividends. Other control variables related to corporate governance dimensions such as ownership structure and quality of the audit are out of the scope of the study and accordingly the ability to generalize results of the study is conditioned on the variables used and the sample being selected. The rest of the study is organized as follows. Section 5 provides the literature review about prior research and ends by the formulation of research hypotheses. Section 6 presents the research methodology; it describes the study sample variables. Section 7 reports the statistical analysis and results of testing research hypotheses and finally, section 8 concludes on the study results.

5. Literature Review and hypotheses formulation

The concept of comprehensive income had firstly appeared in the United States' Conceptual Accounting Framework and it was defined as the change in firm's equity (net assets) during the period resulting from transactions and events from non-owner sources. It includes all changes in equity during a period except those resulting from investments by owners and distributions to owners (Financial Accounting Standard Board, SFAS No. 130 par 70 cited in (Acar and Karacaer 2017) p. 7). U.S. GAAP were adopting an all inclusive income approach meaning that all components of income should be recognized in a single statement before the results of firm's net performance are transferred to the equity section in the statement of financial position (Acar and Karacaer 2017). Adjustments to unrealized gains and losses arising from re-measurement of available for sale securities, foreign currency translation adjustments, minimum required pension liability adjustments and changes in the market values of certain future contracts as hedges were reported under the stockholders' equity. Starting from 1997, the FASB introduced SFAS No. 130 "Reporting comprehensive income" where by it; firms should clearly report the value of comprehensive income and its components in its financial statements.

Firms were given three options for the reporting of comprehensive income, the first is reporting comprehensive income and its components in a combined statement of net income and comprehensive income that reports both the components and totals of net income and other comprehensive income components, or in a separate statement of comprehensive income that starts by net income, reports the components of other comprehensive income and ends with comprehensive income or finally, and the third option that involves reporting comprehensive income in the statement of changes in stockholder's equity. However, the update of the standard further eliminated the third option concerned with the presentation of other comprehensive income components in the statement of stockholders' equity in an effort to converge with the IASB (Lin et al 2016). SFAS 130 required firms to report items as adjustments to unrealized gains and losses arising from re-measurement of available for sale securities, foreign currency translation adjustments, minimum required pension liability adjustments and changes in the market values of certain future contracts as hedges as components of comprehensive income and required that the components of comprehensive income to be separately presented from each other.

In an effort to harmonize the financial reporting performance process, the primary accounting standard setting bodies; the IASB and FASB have agreed to cooperate with each other in an effort to promote comparability of accounting information between countries (Ozcan 2015). Such collaboration has motivated the IASB to revise IAS 1 "presentation of Financial Statements" and required firms starting from the year 2009 and afterwards to add within the income statement data about other comprehensive income (Incollingo et al. 2014) in order to converge with the American reporting standard "SFAS 130" through which firms are given two options for the presentation of revenues, expenses and comprehensive income items. The first is a combined statement of income and comprehensive income that reports both the components and totals of net income and other comprehensive income components and the second involves two separate statements; the first is an income statement and the other is the comprehensive income statement that reports the comprehensive income using net income or loss from the income statement as the starting value and then adds the components of other comprehensive income.

Other comprehensive income includes changes in the fair value of some items that are not included in the computation of net income, due to the lower likelihood that those items might be realized directly or immediately however they are still perceived to be essential to the prediction of the firm's future operating performance (Incollingo et al. 2014).

The IASB emphasized that the main objective of financial statements is to assist users of those statement in evaluating the firm's ability to generate cash in the coming periods; that is predicting the timing, nature and uncertainty of future cash flows (IASB Framework, 2010 cited in Incollingo et al. 2014). In this regard, comprehensive income can be considered as the earnings future figure when compared to profits and losses figures as the former includes unrealized gains and losses that could provide investors and creditors with essential information about expected cash flows (Incollingo et al 2014). IAS 1 (as cited in Ozcan 2015) mentioned the components of other comprehensive income: changes in revaluation surplus, gains and losses resulting from translating financial statements of foreign operations, re-measurement of defined pension plans and gains and losses from investments in equity instruments measured at fair value through other comprehensive income (Ozcan 2015)

The Egyptian accounting standard (EAS) 1: (Presentation of financial statements) required firms to comply with the second option only that involves the presentation of two separate statements; an income statement and a comprehensive income statement. EAS 1 (2015) specified the requirements that should be placed – at minimum- in the statement of comprehensive income which are (a) profit or loss (obtained from the statement of profit or loss) (b) all components of other comprehensive income classified according to its nature company's share in the components of other comprehensive income of associated companies and joint ventures accounted for using the equity method, and finally (c) total comprehensive income for the period. Supporters of a separate comprehensive income statement believe that including all data related to comprehensive income in one statement provide more relevant and accurate data that can better help financial statements users in performing better forecasts for the firm's cash flows and earnings in the future (Kanagaretnam et al 2009).

The standard did not specify when to recognize and how to measure the items that constitute other comprehensive income in order to reach comprehensive income, but it had provided a model for a comprehensive income statement that includes the following components: current foreign currency translation adjustments, current unrealized gains or losses on re-measuring available for sale financial assets, current gains or loss on cash flow hedges/ or on hedging instruments of a net investment in a foreign operation, current actuarial gains or losses on defined pension obligations, company's share in the components of other comprehensive income of associate companies and finally income tax on the components of other comprehensive income.

Literature provided mixed evidence on the predictive power of net income versus comprehensive income in predicting future performance of the firm. Studies in this field were classified into two main categories, the first of which measured firm's performance using stock prices and returns and the other category of studies compared between net income and comprehensive income in terms of their relative power to predict future cash flows and net income.

Hirst and Hopkins (1998) argued that comprehensive income could be more useful for financial statement analysts if it is reported in a separate statement and it would not be helpful to analysts when comprehensive income is reported as a part of the statement of stockholder's equity. Dhaliwal et al. (1999) provided evidence –with the exception of financial firms - for the absence of any strong association between comprehensive income and market prices or stock returns, However, they provided evidence for the superiority of net income relative to comprehensive income in predicting future cash flows or net income for the sampled firms in the USA. They clearly emphasized that their results do not support the advocates claiming that comprehensive income can better measure the firm's performance compared to net income.

Saeedi (2008) examined a sample of companies listed in Tehran stock exchange during the period from 2001 to 2003 in addition to a sample of state owned companies comprising 647 firm year observations. He found no evidence for the superiority of comprehensive income over net income for evaluating the firm's performance measured in terms of its predictive ability for cash flows. Biddle and Choi (2006) studied a sample of US firms in the period 1994-1998 and they

were able to report a stronger association between comprehensive income and stock returns than with net income. They didn't find a single definition for income that can dominate the decision usefulness in the predicting of future operating income. According to Biddle and Choi (2006) broader definitions of income are more useful in decision making for investors and narrower definition of income can be of more value in executive compensation contracts. Using a sample of 3716 firms, Choi et al. (2007) conducted an empirical study to analyze the predictive power of comprehensive income disclosures and they provided evidence of the incremental predictive power of comprehensive income in estimating the firm's financial performance and stock market prices in the future.

Kanagaretnam et al. (2009) explained that the reason behind mixed results obtained by previous studies is due to their dependence on "as if methodology" to obtain ex-ante measures of other comprehensive income data which introduce measurement errors in the results. They used actual data in their study of a sample of Canadian firms for the period 1998-2003, and they found a significant association between adjustments for available for sale financial assets and cash flow hedges on one hand and market prices of sampled firms on the other. They were also able to provide evidence that other comprehensive income as a whole is significantly associated with stock prices in comparison to net income. Finally, they found that net income has a better ability to predict future net income than comprehensive income.

Tsuji (2013) conducted a study on firms in the electric appliances industry in Japan to investigate the association of comprehensive income with the firms' future performance. He was able to provide evidence on the superiority of comprehensive income to other earnings measures or cash flows with regard to estimating future stock returns for the fiscal years 2009 to 2011.

Analysis of the previous studies revealed a mixed evidence concerning the relative ability of each of comprehensive income and net income in predicting future cash flows, net income, and comprehensive income as some studies supported the superiority of comprehensive income in this respect (Choi et al. 2007 and Tsuji 2013). Other studies provided evidence for the superiority of net income to comprehensive income in predicting firm's future earnings (Kanagaretnam et al. 2009). Finally, the third group of studies failed to provide any evi-

dence for the presence of any incremental predictive power for comprehensive income to net income in predicting future cash flows or firm's future earnings (Dhaliwal et al. 1999 and Saeedi 2009). These contradicted results motivated the researcher to examine whether the requirement of Egyptian Accounting Standard No.1"Presentaion of Financial Statements" concerning the presentation of comprehensive income and its components in a separate statement in order to evaluate the relative ability of each of comprehensive income and net income in predicting firms' cash flows, net income and comprehensive income in the future (Zulch and Pronobis 2010 and Khan 2012). Accordingly, **the first set of study hypotheses presented in their alternative forms could be formulated as follows:**

H_1: The ability of net income in predicting future cash flows differs from that of comprehensive income for companies listed in the Egyptian stock exchange**.**

H_2: The ability of net income in predicting future net income differs from that of comprehensive income for companies listed in the Egyptian stock exchange.

H_3: The ability of net income in predicting future comprehensive income differs from that of comprehensive income for companies listed in the Egyptian stock exchange.

The IASB had allowed firms some disaggregation in the disclosure of comprehensive income components in order to improve decision makers' ability in predicting the entity's cash flows (Goncharov and Hodgson 2008). Hirst and Hopkins (1998) pointed out that the presentation format of comprehensive income and its components can assist in detection of earnings management practices. Studies had provided mixed evidence on the usefulness of disaggregating other comprehensive income components. For example, Dhaliwal et al. (1999) compared the values of adjusted R^2 for several regression models of returns on the components of other comprehensive income and they found that the only component of comprehensive income that worked on improving the association between net income and stock returns was adjustments related to marketable securities. O'Hanlon and Pope (1999) provided week evidence that the other comprehensive income components did not provide any value relevance for their studied sample of UK firms. Cahan et al (2000) found no incremental value

relevance to the disclosure of other comprehensive income items in New Zealand firms.

On the other hand, Lin (2006) conducted a study on UK firms and found that the voluntary disclosure of other comprehensive income components by these firms has incremental value relevance. Studies performed on Japanese firms examining the usefulness of each of the other comprehensive income components, found no additional value relevance of the item "changes in the unrealized holding gains and losses on available for sale securities (Wakabayashi 2002). Ide (2006) examined the usefulness of two components which are changes in foreign currency translation adjustments and adjustments on available for sale securities. He found a significant usefulness for the first component in providing value relevance.

Wakabayashi (2010) investigated the predictive power of other comprehensive income on a sample of 8465 firm- year observations for one future period for comprehensive income and net income. He was able to provide evidence for the superiority of net income to comprehensive income in predicting net income. However, when comprehensive income is separated to other comprehensive income and net income, the other comprehensive income showed superiority in predicting future net income. Zulch and Pronobis (2010) had also conducted a study on German listed firms for the period 1998 - 2007 to examine the predictive power of comprehensive income and its individual components on the entity's performance in the future. The study was unable to provide any evidence that comprehensive income has a superior predictive power for future operating performance of the firm when compared to net income. However, they found an incremental predictive power for the components of other comprehensive income on the future operating performance of the firm.

Accordingly, **the second set of hypotheses can be formulated in their alternative forms as follows:**

H_4: The relative ability of the individual components of other comprehensive income in predicting future cash flows differs from that of aggregate other comprehensive income for companies listed in the Egyptian stock exchange.

H_5: The relative ability of individual components of other comprehensive income in predicting future net income differs from that of ag-

gregate other comprehensive income for companies listed in the Egyptian stock exchange.

H_6: The relative ability of individual components of other comprehensive income in predicting future comprehensive income differs from that of aggregate other comprehensive income for companies listed in the Egyptian stock exchange.

6. Research Methodology

6.1. Study population and sample

The study examines public non-financial Companies listed in the Egyptian stock exchange. Due to data constraints, quarterly financial reports (Acar and Karacaer 2017) issued by the companies in the years 2016 and 2017 were used. This is because the Egyptian accounting standard issued in 2015 is made effective for firms listed in the Egyptian Stock exchange is made effective. This resulted in a total of 400 firm quarter observations extracted from the comprehensive income statements of sampled companies in the study period. Firms that didn't issue a separate comprehensive income statement are excluded from the study sample as this is considered as a non compliance with the standard. Banks and insurance companies are also excluded from the sample due to comparability issues and because of differences in asset and capital structure; variables included in the models are not appropriate for these types of organizations (Gunathilaka 2014). Retained firms are required to have financial information for at least two quarters to ensure that all variables are calculated and sometimes three quarters for those firms not presenting the data for each quarter separately but from the beginning of the year to the end of the reported period. Market prices are obtained from website of http://www.mubasher.info/countries/eg/stockprices.

6.2. Measurement of the study variables

This section is concerned with describing the measurement of the variables used in the study.

a. Dependent Variables: The study uses three dependent variables: **Future Cash flows (CF_{it+1}):** This is the cash flow for the quarter following the quarter under study.

Future Net income (NI_{it+1}): This is the net income for the quarter following the quarter under study as reported in the firm's income statement.

Future Comprehensive income (CI_{it+1}): This is the comprehensive income for the quarter following the quarter under study as reported in the comprehensive income statements.

b. Independent Variables: The following independent variables are used in this study**: Net income (NI_{it}):** The net income for the current quarter reported in the firm's income statement.

Comprehensive Income (CI_{it}): The comprehensive income for the current quarter reported in the firm's comprehensive income statement computed as net income plus or minus other comprehensive income components.

D_{Neg_NI}: The dummy variable taking the value "1" when net income is negative and "zero" otherwise.

D_{Neg_CI}: The dummy variable taking the value "1" when comprehensive income is negative and "zero" otherwise.

Using those last two dummy variables and the two interactive variables ($NI_{it} * D_{Neg\_NI}$) and (CI_{it}* D_{Neg_CI}) act as controls for conditional conservatism which is the timelier recognition of losses rather than profits which can help in improving the accuracy of estimating future values. (Zulch and Pronobis 2010)

Individual Components of other Comprehensive Income

- The foreign currency translation adjustment (**$FOREX_{it}$).**
- Current actuarial gains or losses on defined benefit pension obligation **($ACTUAR_{it}$).**
- Unrealized gains and losses on re-measuring available for sale securities **(AFS_{it}).**
- The part of comprehensive income transferred to deferred profits and losses **($DEF\ P\&L_{it}$).**

Gains and losses for each of the previous four other comprehensive income components were included as one variable and not classified into two sub-observations as the researcher is interested in the predictive power of those items rather than the direction of their effect on future cash flows and earnings figures

- Income taxes on other comprehensive income (Taxes on OCI_{it}).

Note that company's share in the components of other comprehensive income of associate companies and changes in the market values

of certain future contracts as hedges are omitted from the regression analysis due to the limited number of observations

other comprehensive income (OCI_{it})(Aggregate)

It is calculated as the total of other comprehensive income components. All dependent and independent variables are normalized and divided by total assets at the beginning of the fiscal year in which the financial statements are issued to avoid biasness of results by firms large in size (Sloan 1996 and Goncharov and Hodgson 2008 and Incollingo et al. 2014)

C- ControlVariables

Book to Market Ratio (BTM_{it}): Is the book value of the firm's equity divided by the market value of its equity computed by dividing the number of shares outstanding by the market value per share at the end of the period (Choi and Zang 2006).

Debt to Equity Ratio (D/E_{it}): Is a measure of firm's accounting leverage calculated by dividing total liabilities by owner's equity (Goncharov and Hodgson 2008).

Firm Size (FS_{it}): Is computed by the natural log of total assets.

CIN_{it}: Is a dummy variable taking the value of 1 when comprehensive income is greater than net income and zero otherwise (Choi and Zang 2006).

Dividends (DIV_{it}): Are cash dividends paid by the firm i in period t, and obtained from the cash flows statement of the firm, the cash flow section on financing activities.

6.3. Research Models

In this section, models used to test research hypotheses[1] are presented To test hypothesis H_1; which is concerned with comparing the predictive ability of net income versus comprehensive income for future cash flows, the following two models are used (Saeedi 2008):

Model 1: $CFi_{t+1} = \alpha_{i,t} + ß_1 D_{Neg\_NI} + ß_2 NI_{it} + ß_3 (D_{Neg\_NIit} * NI) + ß_4$ ……$ß_8$ Control variables + $€_i$

Model 2: $CFi_{t+1} = \alpha_{i,t} + ß_1 D_{Neg\_CI} + ß_2 CI_{it} + ß_3 (D_{Neg\_CIit} * CI) + ß_4$ ……$ß_8$ Control variables + €

[1] Variables used in the research models were previously defined in section (6.2)

To test hypothesis H_2; which is concerned with comparing the predictive ability of net income versus comprehensive income for future net income, the following two models are used:

Model 3: $NI_{t+1}= \alpha_{i,t} + ß_1 D_{Neg\_CI} + ß_2 NI_{it} + ß_3 (D_{Neg\_CIit} * NI) + ß_4$ ……$ß_8$ Control variables $+ €_i$

Model 4: $NI_{t+1}= \alpha_{i,t} + ß_1 D_{Neg\_CI} + ß_2 CI_{it} + ß_3 (D_{Neg\_CIit} * CI) + ß_4$ ……$ß_8$ Control variables $+ €_i$

To test hypothesis H_3; which is concerned with comparing the predictive ability of net income versus comprehensive income for future comprehensive income, the following two models are used:

Model 5: $CI_{t+1}= \alpha_{i,t} + ß_1 D_{Neg\_CI} + ß_2 NI_{it} + ß_3 (D_{Neg\_CIit} * NI) + ß_4$ ……$ß_8$ Control variables $+ €_i$

Model 6: $CI_{t+1}= \alpha_{i,t} + ß_1 D_{Neg\_CI} + ß_2 CI_{it} + ß_3 (D_{Neg\_CIit} * CI) + ß_4$ ……$ß_8$ Control variables $+ €_i$

To test hypothesis H_4; which is concerned with comparing the predictive ability of other comprehensive income components versus aggregate comprehensive income for future cash flows, the following two models are used:

Model 7: $CFi_{t+1}= \alpha_{i,t} + ß_1 NI_{it} + ß_2 OCI + ß_3$……

$ß_7$ Control variables $+ €_i$

Model 8: $CFi_{t+1}= \alpha_{i,t} + ß_1 NI_{it} + ß_2 FOREX_t + ß_3 ACTUAR + ß_4 AFS +$ $ß_5$ DEF P&L $+ß_6$ Taxes on OCI $+ ß_7$…… $ß_{11}$Control variables $+ €$

To test hypothesis H_5; which is concerned with comparing the predictive ability of other comprehensive income components versus aggregate comprehensive income for future net income, the following two models are used:

Model 9: $NI_{t+1}= \alpha_{i,t} + ß_1 NI_{it} + ß_2 OCI + ß_3$……

$ß_7$ Control variables $+ €_i$

Model 10: $NI_{t+1}= \alpha_{i,t} + ß_1 NI_{it} + ß_2 FOREX_t + ß_3 ACTUAR + ß_4 AFS +$ $ß_5$ DEF P&L $+ß_6$ Taxes on OCI $+ ß_7$…… $ß_{11}$Control variables $+ €_i$

To test hypothesis H_6; which is concerned with comparing the predictive ability of other comprehensive income components versus aggregate comprehensive income for future comprehensive income, the following two models are used:

Model 11: $CI_{t+1}\alpha_{it}+ß_1NI_{it,}+ß_2OCI_{it}+ß_3$ …… $ß_7$ Control variables $+ €_i$

Model 12: $CI_{t+1}= \alpha_{i,t} + ß_1 NI_{it} + ß_2 FOREX_{it} + ß_3 ACTUAR_{it} + ß_4 AFSit$ $+ ß_5$ DEF P&L $+ß_6$ Taxes on OCI $+ ß_7$…… $ß_{11}$Control variables $+ €_i$

6.4.Descriptive Statistics

The following table provides descriptive statistics for study variables

Table (1) Descriptive Statistics for study variables*

Variables	Mean	Median	Std. Deviation	Minimum	Maximum
CFi_{t+1}	0.029339141	0.0095066	0.20396107	-2.3774948	1.665219485
NIi_{t+1}	0.035465465	0.0119789	0.196276875	-0.7712618	2.502399965
CI_{it+1}	0.03767568	0.0124243	0.197978173	-0.7712618	2.502399965
NI_{it}	0.043858216	0.0123149	0.189373784	-0.0978356	2.502399965
Ci_{t}	0.044623136	0.0124507	0.190313292	-0.1859046	2.502399965
$FOREX_{it}$	-0.002939283	0	0.094849542	-1.7719545	0.494025613
ACT G&L$_{it}$	1.27371E-05	0	0.000230487	0	0.004582458
Tax on OCI_{it}	0.000103311	0	0.003486089	-0.0334826	0.038808209
AFS_{it}	0.000766884	0	0.010725691	-0.04504	0.123232387
DEF P&L$_{it}$	0.001237525	0	0.01755157	-0.0494032	0.254313596
OCI_{it}	-0.000811379	0	0.0948000711	-1.77195446	0.4446224112
BTM_{it}	2.646776936	1.0418605	6.452497199	-0.0636947	40.67718
D/E_{it}	1.966181772	0.7609174	8.953658349	-43.301738	138.3981376
FS_{it}	19.91651602	20.187075	1.719065339	15.6234965	23.84840232
CIN_{it}	0.1675	0	0.373889333	0	1
DIVit	41793095.26	0	462506367	-2000000	8977930338

*400 firm quarter observations are used in the study

Table (1) provides descriptive statistics for study variables for the period. 400 firm quarter observations were extracted from actual reported financial statements issued in the study period (2016 and 2017). Results show that the minimum, maximum and standard deviation values for net income and comprehensive income for any future period (Ni_{t+1} and CI_{t+1}) are approximately the same (-0.77, 2.5 and 0.196 respectively). Cash flows for any future period (CF_{t+1}) are showing higher variation as depicted by the higher value of the stand-

ard deviation of observations (0.203). It can also be noticed that most of sample firms are profitable as indicated by the median and mean of net income (N_{it}) and comprehensive income (CI_{it}) and the mean of net income (0.04386) is very close to the mean of comprehensive income (0.044623). Sample firms reported five components of other comprehensive income which are foreign currency translation adjustment ($FOREX_{it}$), Current actuarial gains or losses on defined benefit pension obligation ($ACTUAR_{it}$), unrealized gains and losses on remeasuring available for sale securities (AFS_{it}), the part of comprehensive income transferred to deferred profits and losses (DEF $P\&L_{it}$) and tax on other comprehensive income (Tax on OCI_{it}). Other components are excluded from the study due to the very small number of observations that would allow them to be included in the regression model. All variables were divided by total assets at the beginning of the fiscal year in which the quarter data is disclosed.

1.1. Testing for multicollinearity

Table (2) displays the correlation matrix between study variables using Pearson correlation. As expected, net income and comprehensive income measures are strongly correlated (0.980 according to Pearson correlation coefficient)[2]. Tax on other comprehensive income and income resulting from foreign currency transactions ($FOREX_{it}$) are the two most common components correlated with other comprehensive income. Other components did not show a significant correlation.

Concerning the correlation between the components of other comprehensive income, analyses didn't show a significant correlation between the OCI components except for the existence of a positive correlation between comprehensive income transferred to deferred profits and losses

[2] Note that these two variables are not included in the same model. Accordingly, such a strong correlation between the two variables does not pose any problem for the model. Variables were tested for multicollinearity using variance inflation factor (VIF) which were found to be less than 2 for the independent variables included in the same model indicating the absence of multicollinearity.

Table (2) Correlation matrix between study variables

		CF t+1	NI t+1	CI t+1	NI t	Cit	OCI	FOREX	ACT G&L	Tax on OCI	AFS	DEF P&L	BTM	D/E	FS	CIN	Div
CF t+1	Pearson Correlation	1	-0.015	-0.007	.318**	.315**	0.013	0.015	-0.021	0.009	-0.006	-0.011	0.001	-0.002	0.043	-0.001	0.019
	Sig. (2-tailed)		0.766	0.895	0.000	0.000	0.802	0.764	0.668	0.865	0.908	0.821	0.984	0.975	0.392	0.989	0.701
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
NI t+1	Pearson Correlation	-0.015	1	.980**	.629**	.625**	0.008	0.007	-0.009	0.002	-0.006	0.010	-0.016	-0.005	0.087	-0.062	0.000
	Sig. (2-tailed)	0.766		0.000	0.000	0.000	0.875	0.896	0.851	0.965	0.912	0.838	0.748	0.920	0.082	0.218	0.994
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
CI t+1	Pearson Correlation	-0.007	.980**	1	.622**	.617**	0.008	0.007	-0.010	-0.001	-0.009	0.009	-0.018	-0.005	0.083	-0.055	0.003
	Sig. (2-tailed)	0.895	0.000		0.000	0.000	0.877	0.887	0.841	0.989	0.862	0.856	0.719	0.927	0.099	0.273	0.959
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
NI t	Pearson Correlation	.318**	.629**	.622**	1	.993**	0.004	0.011	-0.038	-0.006	-0.010	-0.027	-0.026	-0.020	.109*	-0.074	-0.002
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.929	0.827	0.450	0.902	0.847	0.586	0.607	0.690	0.030	0.138	0.970
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Cit	Pearson Correlation	.315**	.625**	.617**	.993**	1	0.063	0.068	-0.040	0.000	0.015	-0.037	-0.021	-0.020	.107*	-0.033	-0.002
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.211	0.175	0.430	0.999	0.764	0.456	0.672	0.685	0.032	0.510	0.968
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
OCI	Pearson Correlation	0.013	0.008	0.008	0.004	0.063	1	.967**	0.009	.158**	.113*	0.077	0.008	0.004	-0.009	0.064	0.001
	Sig. (2-tailed)	0.802	0.875	0.877	0.929	0.211		0.000	0.856	0.002	0.024	0.122	0.865	0.943	0.852	0.201	0.990
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
FOREX	Pearson Correlation	0.015	0.007	0.007	0.011	0.068	.967**	1	-0.009	0.035	-0.053	-.158-**	0.006	-0.002	-0.033	0.041	0.003
	Sig. (2-tailed)	0.764	0.896	0.887	0.827	0.175	0.000		0.856	0.480	0.292	0.002	0.907	0.965	0.504	0.412	0.949
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
ACT G&L	Pearson Correlation	-0.021	-0.009	-0.010	-0.038	-0.04	0.009	-0.009	1	0.013	0.046	0.055	-0.020	0.003	0.034	.108*	-0.005
	Sig. (2-tailed)	0.668	0.851	0.841	0.450	0.430	0.856	0.856		0.794	0.361	0.277	0.696	0.948	0.503	0.030	0.920
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Tax on OCI	Pearson Correlation	0.009	0.002	-0.001	-0.006	0.000	.158**	0.035	0.013	1	-0.021	.475**	-0.011	-0.004	0.020	0.009	-0.002
	Sig. (2-tailed)	0.865	0.965	0.989	0.902	0.999	0.002	0.480	0.794		0.675	0.000	0.822	0.935	0.697	0.852	0.966
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
AFS	Pearson Correlation	-0.006	-0.006	-0.009	-0.010	0.015	.113*	-0.053	0.046	-0.021	1	.287**	0.046	0.009	0.071	.278**	-0.012
	Sig. (2-tailed)	0.908	0.912	0.862	0.847	0.764	0.024	0.292	0.361	0.675		0.000	0.362	0.859	0.155	0.000	0.809
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
DEF P&L	Pearson Correlation	-0.011	0.010	0.009	-0.027	-0.04	0.077	-.158-**	0.055	.475**	.287**	1	-0.011	0.027	0.083	-0.049	-0.007
	Sig. (2-tailed)	0.821	0.838	0.856	0.586	0.456	0.122	0.002	0.277	0.000	0.000		0.825	0.595	0.099	0.326	0.896
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
BTM	Pearson Correlation	0.001	-0.016	-0.018	-0.026	-0.02	0.008	0.006	-0.020	-0.011	0.046	-0.011	1	-0.054	0.011	-0.025	-0.019
	Sig. (2-tailed)	0.984	0.748	0.719	0.607	0.672	0.865	0.907	0.696	0.822	0.362	0.825		0.284	0.820	0.621	0.704
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
D/E	Pearson Correlation	-0.002	-0.005	-0.005	-0.02	-0.02	0.004	-0.002	0.003	-0.004	0.009	0.027	-0.054	1	.119*	-0.003	-0.011
	Sig. (2-tailed)	0.975	0.920	0.927	0.690	0.685	0.943	0.965	0.948	0.935	0.859	0.595	0.284		0.017	0.954	0.827
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
FS	Pearson Correlation	0.043	0.087	0.083	.109*	.107*	-0.009	-0.033	0.034	0.020	0.071	0.083	0.011	.119*	1	0.002	.116*
	Sig. (2-tailed)	0.392	0.082	0.099	0.030	0.032	0.852	0.504	0.503	0.697	0.155	0.099	0.820	0.017		0.962	0.020
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
CIN	Pearson Correlation	-0.001	-0.062	-0.055	-0.074	-0.033	0.064	0.041	.108*	0.009	.278**	-0.049	-0.025	-0.003	0.002	1	-0.030
	Sig. (2-tailed)	0.989	0.218	0.273	0.138	0.510	0.201	0.412	0.030	0.852	0.000	0.326	0.621	0.954	0.962		0.556
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
Div	Pearson Correlation	0.019	0.000	0.003	-0.002	-0.002	0.001	0.003	-0.005	-0.002	-0.012	-0.007	-0.019	-0.011	.116*	-0.030	1
	Sig. (2-tailed)	0.701	0.994	0.959	0.970	0.968	0.990	0.949	0.920	0.966	0.809	0.896	0.704	0.827	0.020	0.556	
	N	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

(DEF P&L$_{it}$) on one hand and Tax on Other comprehensive income (Tax on OCI$_{it}$), income resulting from foreign currency transactions (FOREX$_{it}$) and unrealized gains and losses on re-measuring available for sale securities (AFS$_{it}$) on the other hand.

Concerning the control variables, firm size measured by the natural log of total assets (FS$_{it}$) showed a positive correlation with the two measures of performance (net income and comprehensive income) as indicated by Pearson positive correlation coefficients. It also showed a positive significant correlation with the firm's leverage ratio measured by dividing its total debts by equity (D/E$_{it}$) which agrees with prior expectations. Other variables didn't show any significant correlation.

7. Statistical Analysis and results of testing research hypotheses

This section presents the results of examining the study hypotheses

7.1. Results of Testing Research Hypothesis H_1

To test hypothesis H_1; which is concerned with comparing the relative ability of net income versus comprehensive income to predict future cash flows, a multivariate linear regression was performed (Wang and Rong 2011) using net income, dummy variable $D_{Neg\_}NI$ and the interactive variable $D_{Neg\_NI} * NI$ as independent variables (Model 1) and then the same regression model was repeated using comprehensive income, its dummy variable D_{Neg_CI} and the interactive variable D_{Neg_CI}*CI (Model 2).

Results of the regression analysis shows that the two models were significant (0.00<0.05); however, the adjusted R^2 for model (1) is (0.085) and F statistic [3] = 5.624 is slightly greater than the corresponding adjusted R^2 for Model (2) (0.081) and F statistic= 5.411. Such a result indicates the absence of a significant difference in the predictive power of net income and comprehensive income with regard to future cash flows resulting in rejecting hypothesis H_1 providing an evidence that the predictive ability of net income for future cash flows does not differ from that of comprehensive income for companies listed in the Egyptian stock exchange. This result contrasts Dhaliwal et al. (1999), Kanagaretnam (2009), Victoria (2015) and Acar and Karacaer (2017) who found evidence for the superior ability of net income to compre-

[3] F-value could be used along with the p-value to decide about the significance of the results , the larger the F-value(bigger than f-critical value found in the table), the more significant are the results and the stronger we can reject the null hypothesis (Archdeacon 1994)

hensive income in predicting future cash flows justifying their results by the less transitory nature of net income compared to comprehensive income. In addition, this result also contradicts Wakabayashi (2002), Goncharov and Hodgson (2008) and Khan (2012) who provided evidence for the superiority of comprehensive income over net income in predicting future cash flows. On the other hand the study results agree with Zulch and Pronobis (2010) who provided evidence that comprehensive income does not have an incremental predictive power over net income within the institutional settings of German IFRS.

Table (3) Regression Results for testing H1*

Dep.Variable	Model (1)			Model (2)			
	St. coeff Beta	T	Sig		St.coeff. Beta	T	Sig
Constant		-0.225	0.822			-0.056	0.955
NI	0.320	6.563	0.000	CI	0.315	6.448	0.000
$D_{Neg_}$NI	0.027	0.501	0.617	D_{Neg_CI}	0.005	0.101	0.920
$D_{Neg\_NI *}$ NI	0.026	0.491	0.623	D_{Neg_CI*}CI	0.005	0.092	0.926
BTM	0.007	0.148	0.882	BTM	0.008	0.157	0.875
D/E	0.004	0.091	0.928	D/E	0.005	0.098	0.922
FS	0.016	0.301	0.764	FS	0.008	0.154	0.878
CIN	0.024	0.492	0.623	CIN	0.011	0.219	0.827
DIV	0.020	0.414	0.679	DIV	0.020	0.405	0.685
Adj R^2		0.085		Adj R^2		0.081	
F statistic (sig)		5.624 (0.000)		F statistic (sig)		5.411 (0.000)	
Predictor is cash flows for future period							

*#of observations 400 –Variables are defined as mentioned before

7.2. Results of Testing Research Hypothesis H_2:

To test hypothesis H_2; which is concerned with examining the relative ability of net income versus comprehensive income in predicting future net income, a multivariate linear regression was performed (Wang and Rong 2011) using net income, dummy variable $D_{Neg_}$NI and the interactive variable $D_{Neg\_NI *}$ NI as independent variables (Model 3) and then the same regression model was repeated using

comprehensive income, with its dummy variable D_{Neg_CI} and the interactive variable $D_{Neg\_CI*}CI$ (Model 4).

Analysis of the results of the two regression models indicated that both of them are significant (p-value= 0.00<0.05) but the adjusted R^2 for model (3) is (0.385) and F (statistic) =32.223 is slightly greater than the corresponding adjusted R^2 for model (4) which is (0.380) and F (statistic) = 31.595. This result shows that the predictive ability of both net income and comprehensive income with respect to future net income is approximately the same resulting in rejecting ***hypothesis H_2*** providing evidence that the predictive ability of net income for future net income does not differ from that of comprehensive income for companies listed in the Egyptian stock exchange.

Such a result contradicts results obtained by Dhaliwal et al. (1999), Wang (2006), and Bataineh and Rababah (2016) and Kanagaretnam (2009) and Acar and Karacaer (2017) who provided evidence for the superior predictive power of net income to comprehensive income with regard to future net income basing their opinion on the more transitory nature of comprehensive income compared to net income making the first poor predictor of the firm's future profitability. Results also contradict with Ozcan (2015) who found that net income provides the greatest predictive power for future net income and operating income. On the other hand, output does not match the results concluded by Khan (2012) who provided evidence that comprehensive income better predicts future net income compared to net income and Choi et al (2007) who confirmed the superior predictive ability of comprehensive income over net income for estimating net income for future periods. In contrast the study supports Zulch and Pronobis (2010) who provided evidence that comprehensive income does not have an incremental predictive power over net income with respect to net income for a future period within the institutional settings of German IFRS.

Table (4) Regression Results for testing H2*

Dep.Variable	Model (3)			Model (4)			
	St. coeff Beta	T	Sig		St.coeff. Beta	T	Sig
Constant		-0.291	0.771			-0.334	0.738
NI	0.623	15.591	0.000	CI	0.621	15.467	0.000
$D_{Neg\_}$ NI	-0.017	-0.385	0.701	D_{Neg*}CI	-0.005	-0.117	0.907
D_{Neg_NI*} NI	0.011	0.258	0.797	D_{Neg*}CI* CI	-0.004	-0.101	0.919
BTM	0.003	0.084	0.933	BTM	-0.003	-0.078	0.938
D/E	0.005	0.130	0.897	D/E	0.005	0.123	0.902
FS	0.017	0.395	0.693	FS	0.019	0.454	0.650
CIN	-0.013	-0.332	0.740	CIN	-0.041	-1.049	0.295
DIV	-0.001	-0.019	0.985	DIV	-0.002	-0.048	0.962
Adj R^2		0.385		Adj R^2		0.380	
F statistic (sig)		32.223 (0.000)		F statistic (sig)		31.595 (0.000)	
Predictor is net income for future period							

*#of observations 400 –Variables are defined as mentioned before

7.3. Results of Testing Research Hypothesis H_3

To test hypothesis H_3; which is concerned with examining the relative ability of net income versus comprehensive income for predicting future comprehensive income, a multivariate linear regression analysis was performed (Wang and Rong 2011) using net income, dummy variable $D_{Neg_}$NI and the interactive variable D_{Neg_NI*} NI as independent variables (Model 5) and then the same regression model was repeated using comprehensive income, its dummy variable D_{Neg_CI} and the interactive variable D_{Neg_CI*}CI (Model 6).

Analysis of the results of the two regression models revealed that the two models were significant (0.00<0.05) but the adjusted R^2 for Model (5) is (0.376) and F statistic) =31.003 is slightly greater than the corresponding adjusted R^2 for Model (6) which is (0.370) and F (statistic)= 30.235. Such a results shows that the predictive power of both of net income and comprehensive income with respect to future comprehensive income is approximately the same resulting in rejecting hypothesis H_3 providing an evidence that the predictive ability of net income for future comprehensive income does not differ from that of

comprehensive income for companies listed in the Egyptian stock exchange. Such a result confirms the results obtained by Wang (2006), Zulch and Pronobis (2010) and Bataineh and Rababah (2016).

Table (5) Regression results for testing H3*

Dep.Variable	Model (5)			Model (6)			
	St. coeff Beta	T	Sig		St. coeff. Beta	T	Sig
Constant		-0.151	0.880			-0.251	0.802
NI	0.617	15.321	0.000	CI	0.614	15.175	0.000
$D_{Neg\_}$ NI	-0.020	-0.433	0.665	D_{Neg*}CI	0.001	0.019	0.985
D_{Neg_NI*} NI	0.008	0.182	0.855	D_{Neg*}CI*CI	-0.004	-0.087	0.931
BTM	0.002	0.044	0.965	BTM	-0.006	-0.142	0.887
D/E	0.006	0.150	0.881	D/E	0.006	0.140	0.889
FS	0.012	0.271	0.786	FS	0.016	0.381	0.704
CIN	-0.007	-0.172	0.863	CIN	-0.035	-0.870	0.385
DIV	0.002	0.053	0.958	DIV	0.001	0.023	0.982
Adj R^2		0.376		Adj R^2		0.370	
F statistic (sig)		31.003 (0.000)		F statistic (sig)		30.235 (0.000)	
Predictor is comprehensive income for future period							

*#of observations 400 –Variables are defined as mentioned before

Analysis of the previous three models did not provide conclusive evidence concerning the superiority of comprehensive income over net income in predicting future operating cash flows, net income and comprehensive income for one period ahead. This result contrasts Dhaliwal et al. (1999), Kanagaretnam (2009), Victoria (2015) and Acar and Karacaer (2017) who found evidence for the superior predictive ability of net income to comprehensive income. In addition, this result also contradicts Wakabayashi (2002), Goncharov and Hodgson (2008) and Khan (2012) who provided evidence for the superiority of comprehensive income over net income in predicting future cash flows. On the other hand the study results agree with Zulch and Pronobis (2010) who provided evidence that comprehensive income does not have an incremental predictive power over net income and the inclusion of an additional measure of income in a separate statement didn't help in improving the informative capability of the financial statements.

Results of Testing Research Hypothesis H_4

To test hypothesis H_4; which is concerned with examining the relative predictive ability of other comprehensive income components relative to aggregate comprehensive income for future cash flows, a multivariate linear regression analysis (Wang and Rong 2011) has been performed to test model (7) where the independent variables were net income and each of the individual components of other comprehensive income, then model (8) was examined using net income and other comprehensive income number taken in aggregate as the two independent variables.

The two models were significant and net income remained the only variable that had a significant predictive power for cash flows of future period (p-value =0.00 <0.05) and all other variables whether other comprehensive income components in details or in aggregate were insignificant (p-values>0.05) showing that information for other comprehensive income whether the individual components or the aggregate figure are not significant when predicting cash flows for a future period.

In addition, analysis reveals that model (8) where other comprehensive income is reported in aggregate has an adjusted R^2= (0.086) and F (statistic) = 6.393 that is very slightly higher than model (7) were the individual components of other comprehensive income are included (adjusted R^2 = 0.077) and F (statistic) = 4.043 resulting in rejecting hypothesis H_4 providing evidence that the predictive ability of individual components of other comprehensive income does not differ from that of aggregate other comprehensive income for future cash flows for companies listed in the Egyptian stock exchange

Table (6) Regression results for testing H4*

	Model (7)			Model (8)			
	St. coeff Beta	T	Sig		St. coeff. Beta	T	Sig
Constant		-0.040	0.968	Constant		-0.013	0.989
NI	0.319	6.564	0.000	NI	0.320	6.616	0.000
FOREX	0.009	0.187	0.851	OCI	0.010	0.200	0.842
ACTUAR	-0.012	-0.243	0.808				
AFS	0.011	0.195	0.845				
DEF P&L	-0.009	-0.168	0.867				
Tax on OCI	-0.002	-0.037	0.971				
BTM	0.011	0.222	0.824	BTM	0.010	0.216	0.829
D/E	0.005	0.106	0.916	D/E	0.005	0.104	0.918
FS	0.006	0.130	0.896	FS	0.005	0.106	0.916
CIN	0.027	0.527	0.598	CIN	0.023	0.484	0.629
DIV	0.020	0.412	0.680	DIV	0.020	0.419	0.675
Adj R^2 0.077				Adj R^2 0.086			
F statistic (sig) 4.043 (0.000)				F statistic (sig) 6.393 (0.000)			
Predictor is cash flows for future period							

*#of observations 400 –Variables are defined as mentioned before

7.4. Results of Testing Research Hypothesis H_5:

To test hypothesis $H_{5;}$ which is concerned with examining the relative predictive ability of other comprehensive income components relative to aggregate comprehensive income for future net income, a multivariate linear regression analysis has been conducted (Wang and Rong 2011) to test model (9) where the independent variables were net income and each of the individual components of other comprehensive income, then model (10) was examined using net income and other comprehensive income number in aggregate as the two independent variables.

The two models were significant and net income remained the only variable that had a significant predictive power for net income for future period (p-value =0.00 <0.05) and all other variables whether the individual components of other comprehensive income or their aggregate measure were insignificant (p-values>0.05) showing that infor-

mation for other comprehensive income whether the individual components or the aggregate figure are not significant when predicting net income for a future period.

In addition, analysis also revealed that model (10) where other comprehensive income is reported as a whole has an (adjusted R^2 = 0.386) and F (statistic) = 36.846 which is slightly higher than the corresponding model (9) with the individual components of other comprehensive income (adjusted R^2 = 0.381) and F (statistic) = 23.296 to the extent that the two numbers are approximately the same resulting in rejecting hypothesis H_5 providing evidence that the predictive ability of individual components of other comprehensive income does not differ from that of aggregate other comprehensive income for future net income for companies listed in the Egyptian stock exchange.

Table (7) Regression Results for testing H5*

	Model (9)				Model (10)		
	St. coeff Beta	**T**	**Sig**		**St. coeff. Beta**	**T**	**Sig**
Constant		-0.319	0.750	Constant		-0.377	0.706
NI	0.628	15.755	0.000	NI	0.626	15.808	0.000
FOREX	0.006	0.148	0.883	OCI	0.006	0.159	0.874
ACTUAR	0.014	0.352	0.725				
AFS	-0.010	-0.214	0.831				
DEF P&L	-0.007	-0.152	0.879				
Tax on OCI	0.032	0.651	0.516				
BTM	0.001	0.016	0.987	BTM	0.000	-0.009	0.993
D/E	0.005	0.119	0.905	D/E	0.005	0.131	0.896
FS	0.016	0.400	0.690	FS	0.019	0.467	0.641
CIN	-0.013	-0.317	0.751	CIN	-0.016	-0.398	0.691
DIV	0.000	-0.012	0.990	DIV	-0.001	-0.026	0.980
Adj R^2		0.381		Adj r^2		0.386	
F statistic (sig)		23.296 (0.000)		F statistic (sig)		36.846 (0.000)	
Predictor is net income for future period							

*#of observations 400 –Variables are defined as mentioned before

6.6 Results of Testing Research Hypothesis H_6

To test hypothesis $H_{6;}$ which is concerned with examining the relative ability of individual components of other comprehensive income in predicting future comprehensive income compared to aggregate comprehensive income, a multivariate linear regression analysis (Wang and Rong 2011) has been conducted to test model (11) (where the independent variables were net income and the individual components of other comprehensive income), then model (12) was examined using net income and other comprehensive income number in aggregate as the two independent variables.

The two models were significant and net income remained the only variable that had a significant predictive power for comprehensive income of a future period (p-value =0.00 <0.05) and all other variables whether the individual components of other comprehensive income or the aggregate figure were insignificant (p-values>0.05 showing that information for other comprehensive income whether the individual components or the aggregate figure are not significant when predicting comprehensive income for a future period.

In addition, comparing the results of the regression of the two models revealed that model (12) where other comprehensive income is reported as a whole has a slightly higher adjusted R^2 (0.377) and F (statistic)=35.451 compared to model (11) where the individual components of other comprehensive income are separately included (adjusted R^2 = 0.371) and F (statistic) = 22.422 resulting in rejecting hypothesis H_6 providing evidence that the predictive ability of individual components of other comprehensive income does not differ from that of aggregate other comprehensive income for future comprehensive income for companies listed in the Egyptian stock exchange.

Table (8) Regression Results for testing H6*

	Model (11)				Model (12)		
	St. coeff Beta	T	Sig		St. co-eff. Beta	T	Sig
Constant		-0.207	0.836	Constant		-0.254	0.800
NI	0.622	15.484	0.000	NI	0.620	15.532	0.000
FOREX	0.006	0.160	0.873	OCI	0.006	0.144	0.885
ACTUAR	0.013	0.312	0.755				
AFS	-0.015	-0.314	0.753				
DEF P&L	-0.013	-0.292	0.771				
Tax on OCI	0.036	0.718	0.473				
BTM	-0.001	-0.022	0.983	BTM	-0.002	-0.053	0.958
D/E	0.005	0.135	0.893	D/E	0.006	0.149	0.882
FS	0.012	0.303	0.762	FS	0.012	0.361	0.718
CIN	-0.005	-0.115	0.909	CIN	-0.009	-0.234	0.815
DIV	0.002	0.058	0.953	DIV	0.002	0.046	0.963
Adj R^2		0.371		Adj R^2		0.377	
F statistic (sig)		22.422 (0.000)		F statistic (sig)		35.451 (0.000)	
Predictor is comprehensive income for future period							

*#of observations 400 –Variables are defined as mentioned before

Analysis of the previous three models provided evidence for the in-significance of other comprehensive income information whether the detailed components or in aggregate with respect to the predictive power of future cash flows, net income and comprehensive income for one future period ahead. However, results did not provide conclusive evidence concerning the superiority of the aggregate measure of other comprehensive income over the individual components of other comprehensive income in predicting future cash flows, net income and comprehensive income for one period ahead for companies listed in the Egyptian stock exchange. Wakabayashi (2002) study and Zulch and Pronobis (2010) and Incollingo (2014) who failed to find evidence for the presence of a significant incremental predictive power of the individual components of other comprehensive income over aggregate other comprehensive income

1. Summary and Conclusion

This paper aimed to examine the relative ability of each of net income and comprehensive income in predicting cash flows, net income and comprehensive income for one future period in addition to comparing the incremental ability of comprehensive income numbers in aggregate versus the individual components of other comprehensive income to predict future cash flows, net income and comprehensive income for one period ahead. The study was conducted using actual data extracted from the quarterly financial statements of firms listed in the Egyptian stock exchange which prepared a separate comprehensive income statement in compliance with Egyptian Accounting standard No.1 issued in 2015 and was made effective starting from the fiscal year 2016. As shown from the following table (9) which presents a summary of research results, the predictive power of both net income and comprehensive income with respect to cash flows, net income and comprehensive income was approximately the same. Results failed to provide conclusive evidence for the superiority of comprehensive income over net income in predicting future cash flows, net income and comprehensive income as both of the two measured proved to have the same information content.

The study provided strong evidence for the insignificance of other comprehensive income information whether the detailed components or in aggregate when predicting future cash flows, net income and comprehensive income for one future period. However, results failed to provide conclusive evidence for the superior predictive power of other comprehensive income components relative to aggregate other comprehensive income with respect to future cash flows, net income and comprehensive income for one future period. This might be attributed to the diverse nature of disclosure by the firms representing the sample which calls for future research studies that could replicate the study for each sector of the economy separately and raises the need for more uniform disclosure practices for other comprehensive income components across all the economic sectors.

Table (9) Summary of Research Results

Hypotheses	Models Used to examine study hypotheses	Independent Variable	Dependent Variable	Result
H_1	M_1 and M_2	Net income (M1) Comprehensive income (M2)	Cash flows for one future period	No conclusive evidence for the superior predictive power of comprehensive income relative to net income
H_2	M_3 and M_4	Net income (M3) Comprehensive income (M4)	Net income for one future period	
H_3	M_5 and M_6	Net income (M5) Comprehensive income (M6)	Comprehensive income for one future period	
H_4	M_7 and M_8	Net income and OCI components (M7) Net income and OCI aggregate (M8)	Cash flows for one future period	No conclusive evidence for the superior predictive power of aggregate comprehensive income relative to the individual components of other comprehensive income
H_5	$M_9$and M_{10}	Net income and OCI components (M9) Net income and OCI aggregate (M10)	Net income for one future period	
H_6	M_{11} and M_{12}	Net income and OCI components (M11) Net income and OCI aggregate (M12)	Comprehensive income for one future period	

Implications for future research studies

Future studies could be conducted on annual financial statements where the study period could be more extended providing more accurate and powerful results. The study had focused on examining the predictive value of net income versus comprehensive income concerning the future firm performance as a dimension of measuring the incremental usefulness of comprehensive income. Future studies could also focus on examining the relevance of comprehensive income and

its components to stock prices and investors' decisions. Future research could also test if changes in the statement's format could affect the relative predictive ability of comprehensive income and its components. Finally, the study could provide fruitful insights to standard setters in Egypt regarding the usefulness of comprehensive income and its components and the location of each of those components in the statement so that it can provide more useful information to decision makers.

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