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Earnings Versus Cash Flows in Predicting Future Cash Flows: Evidence From Egypt and KSA

Abstract

This study examines the role of accrual based earnings derived from accrual accounting basis in comparison with cash flows in the prediction of future operating cash flows of quoted non-financial companies in Egypt and Saudi Arabia . Using a sample of 55 Egyptian companies and 35 Saudi companies over a period of 5 years (2015 – 2019) and employing the OLS regression analysis, the results suggest that both earnings and cash flows have predictive ability in predicting future operating cash flows in both countries. However, the results show that cash flows are a better predictor of future operating cash flows than earnings in both countries. Our study findings are in contrast to the assertion of Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) that earnings are a better predictor of future cash flows.

Keywords: Accrual based earnings; accrual accounting basis; cash flows; future operating cash flows; predictive ability.

الأرباح مقابل التدفقات النقدية في التنبؤ بالتدفقات النقدية المستقبلية

دليل من الشركات المصرية والسعودية

ملخص البحث

ركز الباحث في هذه الدراسة على مقارنة مقدرة كل من الأرباح على أساس الاستحقاق والتدفقات النقدية من الأنشطة التشغيلية على التنبؤ بالتدفقات النقدية المستقبلية في الشركات غير المالية المصرية والسعودية. وقد اعتمد الباحث على عينة مكونة من ٥٥ شركة مصرية و ٣٥ شركة سعودية خلال الفترة (٢٠١٥-٢٠١٩)، مع استخدام طريقة المربعات الضغرى OLS في تحليل الإنحدار. وقد توصل الباحث في هذه الدراسة إلى قدرة كل من الأرباح والتدفقات النقدية من الأنشطة التشغيلية على التنبؤ بالتدفقات النقدية المستقبلية من الأنشطة التشغيلية. كما توصل الباحث أيضا إلى أن قدرة التدفقات النقدية من الأنشطة التشغيلية تفوق مقدرة الأرباح في التنبؤ بالتدفقات النقدية المستقبلية سواء في الشركات المصرية أو الشركات السعودية، وهو ما يتعارض مع تأكيد كل من مجلس معايير المحاسبة المالية FASB ومجلس معايير المحاسبة الدولية IASB بأن الأرباح ذات مقدرة أكبر على التنبؤ بالتدفقات النقدية المستقبلية.

الكلمات المفتاحية: الأرباح وفقاً لأساس الاستحقاق - أساس الاستحقاق المحاسبي - التدفقات النقدية من الأنشطة التشغيلية المستقبلية - المقدرة التنبؤية

Introduction

The company's ability to generate future cash flows is an important component of the decision-making process for many stakeholders. Predicting future cash flows is an essential task for financial evaluation and investment analysis (Hammami, 2012; Farshadfar & Monem, 2013). The cash flow derives its significance in the financial evaluation process from its ability to reflect investment returns and the company's ability to generate earnings and pay dividends.

IASB has adopted introduction to the usefulness of the decision when establishing accounting principles and attaching great importance to accruals in paragraph (24) of its conceptual framework in a way that makes most of the financial statement disclosures related to resources and liabilities and the difference resulting from the application of accounting accruals and information related to cash flows. Some researchers have explained the importance that standard-setting organizations have identified for earnings and their ability to predict future cash flows (Beaver, 1989; Dechow et al., 2000 ; Dichow & Dichev 2001). This method is based on the principle of recognition of all transactions and events as they happen regardless of the date of collection or payment, although opponents of this method assert that the accounting accruals do not reflect well on the company's performance. They have relied on this system, which produces earnings with all of its components that include a degree of personal judgment that exceeds what is included in the cash flow from operating activities .

Accounting literature extensively dealt with the phenomenon of earnings management through recording discretionary accruals, and indicated that discretionary accruals give managers an opportunity to use opportunistic behavior to maximize their personal gains, as a result of which analysts prefer to rely on cash flows to ensure earnings management .So far, there is debate about which component is most effective earnings or cash flows for predicting future cash flows. Several studies have focused on the relationship between earnings and future cash flows (Dechow et al., 1998; Barth et al., 2001).

Overall, the evidence on the the predictability of earnings and cash flows is mixed, with an even split as to which measure is superior. (Nallareddy et al., 2018). In particular, several studies document that earnings are better than current cash flows in predicting future cash flows (e.g., Greenberg et al. 1986 ; Dechow et al., 1998; Kim and Kross 2005; Nam et al., 2012; Arnedo et al., 2012), while other studies document the opposite (e.g., Bowen et al., 1986; Finger 1994; Efayena 2015; Chen et al., 2017).

From the above **the study problem is** summarized in answering the following questions:

- 1- Are current cash flows having predictive ability for future operating cash flows?
- 2- Are current earnings having predictive ability for future operating cash flows?
- 3- Are the current earnings have incremental predictive ability for future cash flows over the current cash flows?

Accordingly, this study **aims** to test the predictive ability of both current earnings and current cash flows in predicting future cash flows in Egyptian companies compared to Saudi companies. It aims also to investigate whether accrual-basis accounting has superior ability than cash-basis accounting in predicting future operating cash flows in Egyptian companies compared to Saudi companies.

The importance of this study stems from scarcity (to the researcher knowledge) of the literature on cash flow prediction in developing countries, except for few studies such as Chong (2012) and Efayena(2015). The literature in this area is also scarce in Egypt and Saudi Arabia. This research is also important because it compares the predictive ability of earnings and cash flows in two Arab countries that differ in the economic level according to Human Development Index (HDI)¹ for the year 2020 as Egypt (0.696) is classified as a

¹ The Human Development Index was developed by the United Nations to measure human development in a country. HDI is quantified by looking at a country's human development such as education, health and life expectancy. HDI is set on a scale from 0 to 1 and most developed countries have a score above .80.

developing country while Saudi Arabia (0.853) is classified as a developed country. This study, therefore, has enormous benefit to users of financial statements in Egypt and Saudi Arabia. Specifically, it would assist investors, financial analysts, creditors, auditors and management in understanding cash flow predictions and use them to assess the ability of a company to generate future cash flows. The rest of this study is organized as follows. [Section 2](#) covers literature review and hypotheses development. [Section 3](#) provides research methodology. Empirical results are presented in [section 4](#). [Section 5](#) summarizes and concludes the study.

2-Literature Review and Hypotheses Development

The concept of cash flow prediction is extremely important for both professionals and academics, as it helps users of financial statements to assess the liquidity, flexibility and financial risks of a company ([Barth et al., 2001](#); [Mullenga and Bhatia, 2017](#)). Many researchers have been interested in cash flow information, as much of their attention has focused on the FASB assertion that implies accounting earnings based on accrual accounting are better in predicting operating cash flows than the operating cash flows themselves. The literature on future cash flow prediction is extensive and focuses on three main streams of research. **The first stream** concentrated on the usefulness of accrual earnings and operating cash flows in predicting stock prices or stock returns ([Sloan, 1996](#); [Vishnani & Shah, 2008](#)). **The second stream** concentrated on the usefulness of cash flows information and accrual accounting in predicting business failures ([Boritz et al., 2007](#); [Shyam & Rajesh, 2013](#)). **The third stream** of research directly questioned FASB's assertion ([Dechow et al., 1998](#); [Kim & Kross, 2005](#); [Jemâa et al., 2015](#)). This study focuses on the third stream of these studies. The accrual based earnings information is derived from the income statement prepared on the basis of accrual accounting but the cash flow information is derived from cash flow statement prepared on the basis of cash accounting ([Efayena 2015](#)).

Many researchers believe that earnings have better predictability of future cash flows than current cash flows (e.g., Dechow et al., 1998; Kim & Kross 2005; Namet al., 2012). The accrual based earning information is supported for many reasons. **First**, it is considered relevant in measuring a firm's performance because it avoids the distortion of uncertain variations in cash flows in the measurement of performance (Kremer & Rizzuto, 2000; Godfrey et al., 2003). **Second**, the matching between expenses and revenues to obtain accrual based earnings reflects the uses of assets in generating revenue. The usefulness of accrual based earnings for predicting a firm's future cash flows has been widely affirmed by a number of researchers (e.g., Greenberg et al 1986 & Board & Day, 1989; Kim & Kross 2005; Namet al., 2012).

On the other hand, Dechow(1994) pointed out that many financial analysts believe that relying on cash flows is better than earnings in expressing financial performance, due to the fact that cash flows are less dependent on personal judgment resulting from the different accounting methods, in addition to the fluctuation of earnings from one period to another.

Wasley & Wu (2006) showed that the managers disclose voluntary cash flow from operating activities to refer to the good news associated with it not only to meet the needs of many investors but also to separate the earnings and their components, especially the cash flows associated with accruals, which reduces earnings manipulation. The previous study justified the managers' tendency to disclose good news related to cash flow that reduces the negative effects of bad news related to earnings.

In the same vein, Call et al., (2009) showed that Financial analysts' prediction of earnings is more accurate if it is accompanied by cash flows from operating activities, whereas financial analysts understand the characteristics of the time series of earnings and their components when they make a link between earnings and cash flows. Call (2008) also showed that financial analysts publish their cash flow forecasts as an important tool for controlling earnings and information disclosed by companies, which improves the predictive ability of

future cash flows. Call(2008) also showed that the extraordinary cash flows significantly decrease during the year following the issuance of financial analysts' forecasts of cash flows. Jemaa et al.(2015) showed that financial analysts make a prediction of the cash flows of companies whose earnings fluctuate . Their study also indicated that predicting cash flow from operating activities reduces manipulation of earnings in an opportunistic manner and improves accruals quality.

It is clear from the above discussion ,that there have been many studies that focused on the ability of earnings and cash flows to predict future cash flows, as there are two directions for those studies.The **first direction** focused on the assertion of FASB that earnings and their components are more able to predict future cash flows than current cash flows(e.g., Barth et al., 2001; Jordan & Waldron 2001; Shubita 2013) .Whereas, the **second direction** focused on the opposite viewpoint of FASB that the current cash flows are better able to predict future cash flows than earnings (e.g., Finger 1994;Krishnan & Largay 2000; Efayena 2015).

Many researchers have investigated the role of earnings and operating cash flows in predicting future operating cash flows. However, their results are mixed. Finger (1994) concluded that cash flow from operations is the best predictor of future cash flow than earnings. Lorek and Willinger (1996) found also that cash flow from operations outperforms earnings for the USA companies. In Australia , Farshadfar et al.(2008) and Habib (2010) found that cash flow from operations has more power in predicting future cash flows compared to other predictors. Al Attar and Hussein (2004), Al Debie (2011), (Efayena 2015) and Senan (2019) reported that cash flows from operations outperform earnings in predicting future cash flows in Uk, Jordon, Nigeria and KSA respectively.So, the researcher therefore hypothesizes that:

H1: Current cash flows have significant predictive ability for future operating cash flows in both Egyptian and Saudi companies.

On the other hand, Greenberg et al.(1986) provide evidence which supports FASB's assertion regarding the superiority of earnings over cash flow from operations in predicting future cash flows. Their study concluded that earnings are more powerful in predicting future operating cash flows. Similarly, Kim and Kross (2005) concluded that earnings are more powerful than cash flow from operations in predicting future cash flows and coefficients on earnings increased over the time period. Jordan and Waldron (2010) found that earnings plus depreciation and amortization achieve superior results than other predictor variables used in their study. Takhtae and Karimi (2013) found that earnings outperform cash flow from operations which support FASB assertion on the superiority of earnings in predicting future cash flows. While Moeinaddin et al.(2013) and Shubita(2013) concluded that earnings and earnings plus depreciation and amortization outperform other predictor variables in the prediction of future cash flows. So the researcher therefore hypothesizes that:

H2: Current earnings have significant predictive ability for future operating cash flows in both Egyptian and Saudi companies.

As a result of the difference in the results of previous studies about which have a higher predictive ability, earnings or operating cash flows. So the researcher therefore hypothesizes that:

H3: Current earnings have incremental predictive power for future operating cash flows over current cash flows in both Egyptian and Saudi companies.

3. Research Methodology

3.1 Research design

The study sample was drawn from companies listed on the Egyptian and Saudi Stock Exchanges in various sectors, excluding banking and insurance sectors due to their different nature, conditions and characteristics. The sample of the study consisted of 55 Egyptian companies with 275 observations, and 35 Saudi companies with 175 observations for a five-year period 2015–2019. Table 1

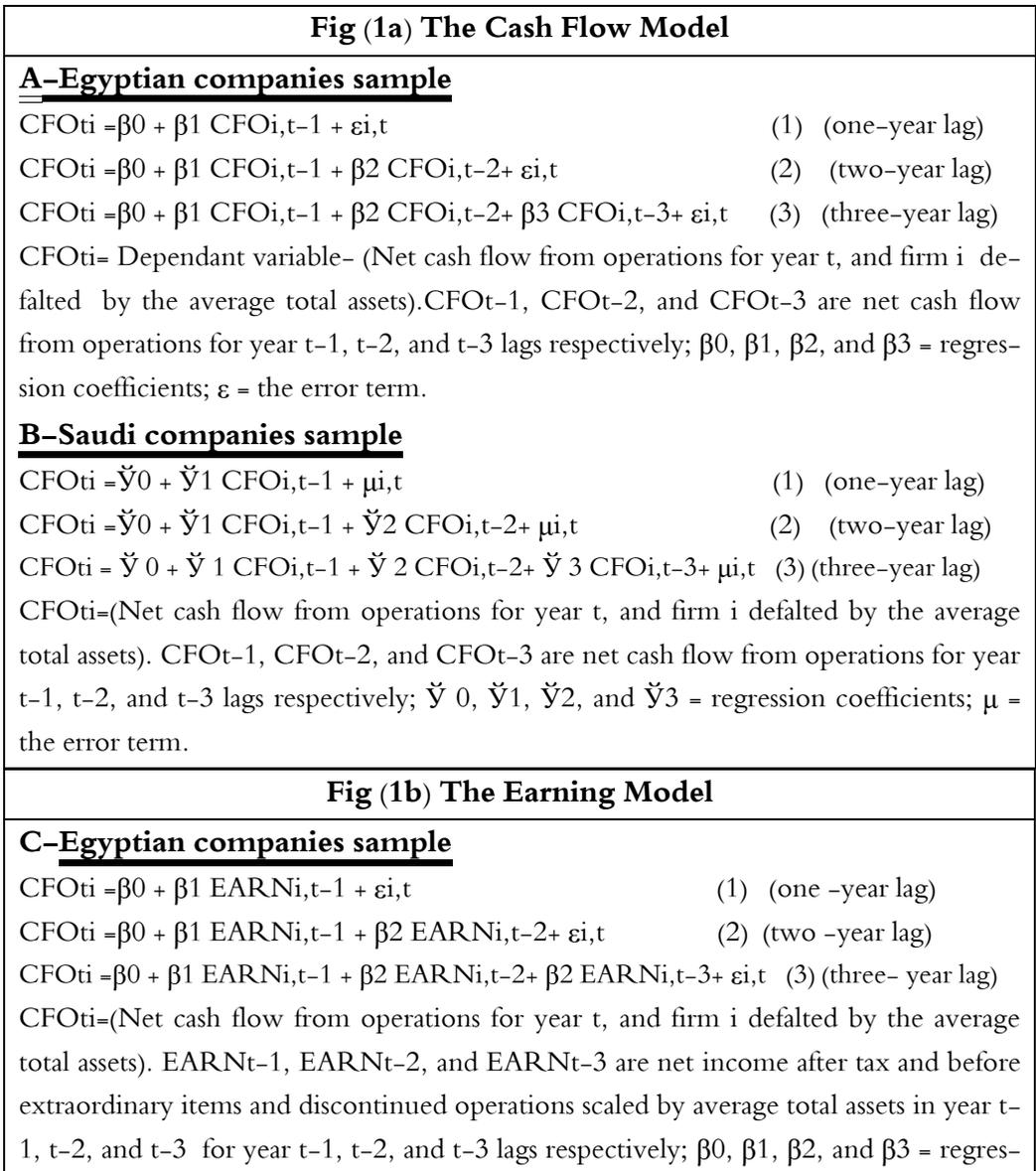
shows the various industry sectors that were included in the sample. The study focused on the income statement, the balance sheet and the statement of cash flows. The annual data for the dependent variable were collected from the end of year 2016 to the end of year 2019. The annual data for the independent variables were lagged, $t-1$, from the end of year 2015 to 2018. This annual data matching in different periods were adopted from [Chong \(2012\)](#) and [Efayena \(2015\)](#).

Table 1: Distribution of sample

| I.Egyptian observations | | |
|---|---------------------|-------------------|
| Sector | Observations | Percentage |
| Basic Resources | 30 | 10.9 |
| Food, Beverages and Tobacco | 75 | 27.3 |
| Health Care & Pharmaceuticals | 45 | 16.4 |
| Industrial Goods , Services and Automobiles | 25 | 9.1 |
| IT , Media & Communication Services | 20 | 7.3 |
| Real Estate | 35 | 12.7 |
| Travel & Leisure | 45 | 16.4 |
| Total | 275 | 100% |
| II.Saudi observations | | |
| Sector | Observations | Percentage |
| Capital goods | 10 | 5.7% |
| Consumer services | 25 | 14.3% |
| Food & Beverage | 5 | 2.9% |
| Health care Equipment & Services | 30 | 17.1% |
| Materials | 80 | 45.7% |
| Real Estate Mgmt & Dev t | 5 | 2.9% |
| Retailing | 10 | 5.7% |
| Telecommunication Services | 10 | 5.7% |
| Total | 175 | 100% |

3.2 Model Specification

This study is based on two models: **the earnings model** and **the cash flows model** that were designed by (Dechow et al., 1998; Quirin et al., 1999, and Kim and Kross, 2005). They posit that future cash flow that is dependent on past aggregate earnings and year lags of cash flow themselves provide a good predictor of future operating cash flows (Efayena 2015). The two models specified for this study is presented as follows in the next figure(1):



sion coefficients; ϵ = the error term.

D- Saudi companies sample

$$CFO_{ti} = \beta_0 + \beta_1 EARN_{i,t-1} + \mu_{i,t} \tag{1} \text{ (one -year lag)}$$

$$CFO_{ti} = \beta_0 + \beta_1 EARN_{i,t-1} + \beta_2 EARN_{i,t-2} + \mu_{i,t} \tag{2} \text{ (two- year lag)}$$

$$CFO_{ti} = \beta_0 + \beta_1 EARN_{i,t-1} + \beta_2 EARN_{i,t-2} + \beta_3 EARN_{i,t-3} + \mu_{i,t} \tag{3} \text{ (three-year lag)}$$

CFO_{ti} =(Net cash flow from operations for year t, and firm i deflated by the average total assets). $EARN_{t-1}$, $EARN_{t-2}$, and $EARN_{t-3}$ are net income after tax and before extraordinary items and discontinued operations deflated by the average total assets in year t-1, t-2, and t-3 for year t-1, t-2, and t-3 lags respectively ; β_0 , β_1 , β_2 , and β_3 = regression coefficients; μ = the error term.

Fig (1c) Measurement of the variabl s

| Variable | Measurement | Prior Studies |
|----------------------|--|---------------------------------------|
| CFO | Net cash flows from operating activities deflated by the average of total assets | Kim & Kross(2005); Efayena(2015) |
| EARN | Net income after tax and befor extraordinary items, special items and discontinued operations deflated by the average of total assets. | Kim & Kross(2005); Efayena(2015) |
| Average total assets | (The book value of total assets at the beginning + The book value of total assets at the end)/2. | Barth et al. (2001); Efayena(2015) |

Figure (1) Research Models

3.3 Data Analysis Method

The ordinary least squares (OLS) technique was used in running the models. The researcher ensures that the regression conditions are met, which are linearity, the normality, homoscedasticity, and no autocorrelation through the Durbin Watson test. The Variance inflation factor (VIF) was employed to test for the presence of multicollinearity. To test the hypotheses, the study utilized the following statistics: F-statistic with its associated p-value, the adjusted R^2 and the t-statistic with its associated p-values (Hair et al. 2010). The researcher used the SPSS statistical analysis software package version 23.

4-Empirical results

4.1 Descriptive Statistics

Table 2 presents the descriptive statistics for the data set. For **Egyptians companies**, Earning (EARN_t) has a mean of 6% and a median of 4% suggesting that on the average Egyptians companies' assets earn positive income. Cash flow (CFO_t) has a mean of 3% and a median of 2% suggesting that on the average Egyptians companies have positive net cash flows. A comparison of the EARN_t and CFO_t shows that the positive mean% and the median % of EARN are higher than the mean % and median % of the CFO_t variable, suggesting that EARN_t is having a positive effect on CFO_t. It means that as EARN_t increases so too does CFO_t.

In Saudi companies, Earning (EARN_t) has a mean of 3% and a median of 3% suggesting that on the average Saudi companies' assets earn positive income. Cash flow (CFO_t) has a mean of 9% and a median of 9% suggesting that on the average Saudi companies have positive net cash flows. A comparison of the EARN_t and CFO_t shows that the positive mean % and the median % of CFO_t are higher than the mean % and median % of the EARN_t variable. This is in contrast to the situation in Egyptian companies.

Table 2: Descriptive Statistics

| I.Egyptian companies | | | | | | | | |
|----------------------|------------------|--------------------|--------------------|--------------------|-------------------|---------------------|---------------------|---------------------|
| Variables | CFO _t | CFO _{t-1} | CFO _{t-2} | CFO _{t-3} | EARN _t | EARN _{t-1} | EARN _{t-2} | EARN _{t-3} |
| Mean | 0.03 | 0.05 | 0.03 | 0.06 | 0.06 | 0.07 | 0.05 | 0.05 |
| Median | 0.02 | 0.02 | 0.02 | 0.03 | 0.04 | 0.04 | 0.02 | 0.05 |
| Std. Dev | 0.13 | 0.11 | 0.13 | 0.26 | 0.09 | 0.09 | 0.09 | 0.18 |
| Min | -0.42 | -0.18 | -0.38 | -1.37 | -0.11 | -0.11 | -0.09 | -0.96 |
| Max | 0.33 | 0.39 | 0.33 | 0.75 | 0.33 | 0.39 | 0.39 | 0.38 |
| N | 275 | 275 | 275 | 275 | 275 | 275 | 275 | 275 |
| II.Saudi companies | | | | | | | | |
| Variables | CFO _t | CFO _{t-1} | CFO _{t-2} | CFO _{t-3} | EARN _t | EARN _{t-1} | EARN _{t-2} | EARN _{t-3} |
| Mean | 0.09 | 0.09 | 0.10 | 0.10 | 0.03 | 0.05 | 0.07 | 0.06 |
| Median | 0.09 | 0.08 | 0.09 | 0.08 | 0.03 | 0.04 | 0.05 | 0.04 |
| Std. Dev | 0.06 | 0.08 | 0.13 | 0.10 | 0.06 | 0.07 | 0.10 | 0.08 |
| Min | -0.01 | -0.04 | -0.09 | -0.14 | -0.07 | -0.10 | -0.07 | -0.05 |
| Max | 0.20 | 0.31 | 0.74 | 0.33 | 0.18 | 0.24 | 0.55 | 0.30 |
| N | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 175 |

4.2 Correlation among the variables

Table 3 shows the correlation among the variables, presented as a matrix. **For Egyptians companies**, an examination of table 3 shows that the correlation between the variables ranges from 2.1% to 76.6%. The highest correlation is 76.6%. But **for Saudi companies**, the correlation between the variables ranges from 33.8% to 83.7%. I calculated VIF and its value doesn't exceed τ , indicating the absence of multicollinearity.

Table 3: Correlation Matrix

| I.Egyptian companies | | | | | | | | |
|----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------------|---------------------|
| Variables | CFO _t | CFO _{t-1} | CFO _{t-2} | CFO _{t-3} | EARN _t | EARN _{t-1} | EARN _{t-2} | EARN _{t-3} |
| CFO _t | 1 | | | | | | | |
| CFO _{t-1} | .654 ^{**} | 1 | | | | | | |
| CFO _{t-2} | .210 | .171 | 1 | | | | | |
| CFO _{t-3} | .446 ^{**} | .407 ^{**} | -.063 | 1 | | | | |
| EARN _t | .477 ^{**} | .635 ^{**} | .460 ^{**} | .021 | 1 | | | |
| EARN _{t-1} | .479 ^{**} | .542 ^{**} | .623 ^{**} | .057 | .766 ^{**} | 1 | | |
| EARN _{t-2} | .144 | .183 | .341* | .146 | .319* | .517 ^{**} | 1 | |
| EARN _{t-3} | .032 | .247 | .411 ^{**} | .044 | .485 ^{**} | .354 ^{**} | .260 | 1 |
| II.Saudi companies | | | | | | | | |
| Variables | CFO _t | CFO _{t-1} | CFO _{t-2} | CFO _{t-3} | EARN _t | EARN _{t-1} | EARN _{t-2} | EARN _{t-3} |
| CFO _t | 1 | | | | | | | |
| CFO _{t-1} | .693 ^{**} | 1 | | | | | | |
| CFO _{t-2} | .517 ^{**} | .510 ^{**} | 1 | | | | | |
| CFO _{t-3} | .382* | .338* | .585 ^{**} | 1 | | | | |
| EARN _t | .662 ^{**} | .669 ^{**} | .463 ^{**} | .463 ^{**} | 1 | | | |
| EARN _{t-1} | .591 ^{**} | .729 ^{**} | .526 ^{**} | .378* | .837 ^{**} | 1 | | |
| EARN _{t-2} | .506 ^{**} | .654 ^{**} | .795 ^{**} | .519 ^{**} | .761 ^{**} | .790 ^{**} | 1 | |
| EARN _{t-3} | .457 ^{**} | .589 ^{**} | .578 ^{**} | .553 ^{**} | .707 ^{**} | .637 ^{**} | .791 ^{**} | 1 |

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

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

4.3 Hypotheses Testing

In testing the hypotheses, the following statistics would be used: t-values, p-values, and the adjusted R^2 . Table 4 presents the results of the regression analysis conducted for cash flow predictability using lagged cash flows model, while table 5 provides the results of the regression analysis for cash flow predictability using lagged earnings.

Table 4: Cash flow predictability using lagged cash flows

| I.Egyptian companies | | | | |
|-----------------------------|-------|--|---|--|
| Independent Variables | | Dependent Variable CFO _t | | |
| | | One -year lag $\beta_0 + \beta_1$ $CF_{i,t-1} + \epsilon_{i,t}$ | Two -year lag $\beta_0 + \beta_1 CF_{i,t-1} + \beta_2$ $CF_{i,t-2} + \epsilon_{i,t}$ | Three -year lag $\beta_0 + \beta_1 CF_{i,t-1} + \beta_2 CF_{i,t-2} + \beta_2$ $CF_{i,t-3} + \epsilon_{i,t}$ |
| Constant | t Sig | -.723 .473 | -.864 .391 | -.978 .333 |
| CFO _{t-1} | t Sig | 6.288 .000 | 6.026 .000 | 4.735 .000 |
| CFO _{t-2} | t Sig | — — | .954 .344 | 1.289 .203 |
| CFO _{t-3} | t Sig | — — | — — | 2.122 .039 |
| Adj. R ² | | 41.64% | 41.55% | 45.23% |
| F-Statistic | | 39.54 | 20.19 | 15.87 |
| F-sig | | .000 | .000 | .000 |
| Durbin Watson | | 2.433 | 2.431 | 2.363 |
| n=275 | | | | |
| II.Saudi companies | | | | |
| Independent Variables | | Dependent Variable CFO _t | | |
| | | One -year lag $\check{Y}_0 + \check{Y}_1$ $CF_{i,t-1} + \mu_{i,t}$ | Two -year lag $\check{Y}_0 + \check{Y}_1 CF_{i,t-1} + \check{Y}_2$ $2 CF_{i,t-2} + \mu_{i,t}$ | Three -year lag $\check{Y}_0 + \check{Y}_1 CF_{i,t-1} + \check{Y}_2 CF_{i,t-2} +$ $\check{Y}_3 CF_{i,t-3} + \mu_{i,t}$ |
| Constant | t Sig | 3.537 .001 | 3.409 .002 | 2.868 .007 |
| CFO _{t-1} | t Sig | 5.519 .000 | 4.055 .000 | 3.973 .000 |
| CFO _{t-2} | t Sig | — — | 1.550 .131 | 1.033 .310 |
| CFO _{t-3} | t Sig | — — | — — | .563 .577 |
| Adj. R ² | | 46.4% | 48.60% | 47.5% |
| F-Statistic | | 30.46 | 17.08 | 11.247 |
| F-sig | | .000 | .000 | .000 |
| Durbin Watson | | 2.104 | 2.123 | 2.158 |
| n=175 | | | | |

| III. All companies | | | | |
|-----------------------|-------|---|--|---|
| Independent Variables | | Dependent Variable CFO _t | | |
| | | One -year lag $b_0 + b_1 CF_{i,t-1} + \mu_{i,t}$ | Two -year lag $b_0 + b_1 CF_{i,t-1} + b_2 CF_{i,t-2} + \mu_{i,t}$ | Three -year lag $b_0 + b_1 CF_{i,t-1} + b_2 CF_{i,t-2} + b_3 CF_{i,t-3} + \mu_{i,t}$ |
| Constant | t Sig | .154 | -.094 | -.288 |
| | | .878 | .925 | .774 |
| CFO _{t-1} | t Sig | 8.341 | 7.545 | 6.142 |
| | | | .000 | .000 |
| CFO _{t-2} | t Sig | ——— | 1.296 | 1.489 |
| | | | .198 | .140 |
| CFO _{t-3} | t Sig | ——— | ——— | 2.706 |
| | | | | .008 |
| Adj. R ² | | 43.52% | 43.95% | 47.75% |
| F-Statistic | | 69.580 | 35.898 | 28.111 |
| F-sig | | .000 | .000 | .000 |
| Durbin Watson | | 2.404 | 2.462 | 2.320 |

n=450

For Egyptians companies, table 4 shows that the F-statistics are significant (p-value = 000). This is an indication that the variables, CFO_{t-1}, CFO_{t-2}, and CFO_{t-3} jointly have an impact on future operating cash flows (CFO_t). The cash flow models of one-year lag, two-year lag, and three-year lag explain 41.64%, 41.55%, and 45.23% respectively of the variations of future operating cash flows. **For Saudi companies**, the F-statistics are significant (p-value = 000). This is an indication that the variables, CFO_{t-1}, CFO_{t-2}, and CFO_{t-3} jointly have an impact on future operating cash flows (CFO_t). The cash flow models of one-year lag, two-year lag, and three-year lag explain 46.4%, 48.6%, and 47.5% respectively of the variations of future operating cash flows. However **the three -year lag** model had the highest predicting ability (Adj. R² = 45.23%) of future operating cash flows in **Egyptian companies**, **the two years lag** model had the highest predicting ability (Adj. R² = 48.6%) of future operating cash flows for **Saudi companies**.

For all companies, the F-statistics are very significant (p-value = 000). This is an indication that the variables, CFOt-1, CFOt-2, and CFOt-3 jointly have an impact on future operating cash flows (CFOt). The cash flow models of one-year lag, two-year lag, and three-year lag explain 43.52%, 43.95%, and 47.75% respectively of the variations of future operating cash flows. However **the three years lag** model had the highest predicting ability (Adj. $R^2 = 47.75\%$) of future operating cash flows for **all companies**.

The Durbin Watson statistics were all close to 2, which are an indication that the residuals of the cash flow regression model were uncorrelated and independent. The estimators of the cash flow model are therefore reliable. So, the researcher therefore accept the hypothesis that **states that current operating cash flows have significant predictive ability for future operating cash flows**. This finding is consistent with findings of studies such as Finger (1994); Lorek & Willinger (1996); Quirin et al. (1999); Al-Debie (2011) and Efayena (2015).

Table 5: Cash flow predictability using lagged Earnings

| I.Egyptian companies | | | | |
|-----------------------|-------|---|---|---|
| Independent Variables | | Dependent Variable CFOt | | |
| | | One -year lag $\beta_0 + \beta_1 \text{EARN}_{i,t-1} + \epsilon_{i,t}$ | Two -year lag $\beta_0 + \beta_1 \text{EARN}_{i,t-1} + \beta_2 \text{EARN}_{i,t-2} + \epsilon_{i,t}$ | Three -year lag $\beta_0 + \beta_1 \text{EARN}_{i,t-1} + \beta_2 \text{EARN}_{i,t-2} + \beta_3 \text{EARN}_{i,t-3} + \epsilon_{i,t}$ |
| Constant | t Sig | -.841 .404 | -.661 .512 | -.653 .516 |
| Earnt-1 | t Sig | 3.969 .000 | 3.917 .000 | 4.086 .000 |
| Earnt-2 | t Sig | — | -1.005 .320 | -.894 .376 |
| Earnt-3 | t Sig | — | — | -1.130 .264 |
| Adj. R^2 | | 21.45% | 21.47% | 21.88% |
| F-Statistic | | 15.75 | 8.38 | 6.04 |

| | | | | |
|----------------------------|-------|---|--|---|
| F-sig | | .000 | .001 | .001 |
| Durbin Watson | | 2.369 | 2.405 | 2.293 |
| n=275 | | | | |
| II. Saudi companies | | | | |
| Independent Variables | | Dependent Variable CFO_t | | |
| | | One -year lag $\check{Y}_0 + \check{Y}_1 \text{ EARN}_{i,t-1} + \mu_{i,t}$ | Two -year lag $\check{Y}_0 + \check{Y}_1 \text{ EARN}_{i,t-1} + \check{Y}_2 \text{ EARN}_{i,t-2} + \mu_{i,t}$ | Three -year lag $\check{Y}_0 + \check{Y}_1 \text{ EARN}_{i,t-1} + \check{Y}_2 \text{ EARN}_{i,t-2} + \check{Y}_3 \text{ EARN}_{i,t-3} + \mu_{i,t}$ |
| Constant | t Sig | 6.486 .000 | 6.231 .000 | 5.542 .000 |
| Earnt-1 | t Sig | 4.212 .000 | 2.197 .035 | 2.155 .039 |
| Earnt-2 | t Sig | — | .448 .657 | -.002 .999 |
| Earnt-3 | t Sig | — | — | .578 .567 |
| Adj. R ² | | 33% | 31.33% | 29.88% |
| F-Statistic | | 17.740 | 8.758 | 5.828 |
| F-sig | | .000 | .001 | .003 |
| Durbin Watson | | 2.390 | 2.351 | 2.278 |
| n=175 | | | | |
| III. All companies | | | | |
| Independent Variables | | Dependent Variable CFO_t | | |
| | | One -year lag $B_0 + B_1 \text{ EARN}_{i,t-1} + \mu_{i,t}$ | Two -year lag $B_0 + B_1 \text{ EARN}_{i,t-1} + B_2 \text{ EARN}_{i,t-2} + \mu_{i,t}$ | Three -year lag $B_0 + B_1 \text{ EARN}_{i,t-1} + B_2 \text{ EARN}_{i,t-2} + B_3 \text{ EARN}_{i,t-3} + \mu_{i,t}$ |
| Constant | t Sig | 1.331 .187 | 1.377 .172 | 1.430 .156 |
| Earnt-1 | t Sig | 4.569 .000 | 3.917 .000 | 4.010 .000 |
| Earnt-2 | t Sig | — | -.415 .679 | -.252 .802 |
| Earnt-3 | t Sig | — | — | -.884 .379 |

| | | | |
|---------------------|--------|--------|--------|
| Adj. R ² | 18.26% | 17.48% | 17.27% |
| F-Statistic | 20.878 | 10.427 | 7.194 |
| F-sig | .000 | .000 | .000 |
| Durbin Watson | 2.164 | 2.288 | 2.398 |
| n=450 | | | |

For Egyptians companies, table 5 shows that the F-statistics are significant (p-value not more than .001). This is an indication that the variables, EARN_{t-1}, EARN_{t-2}, and EARN_{t-3} jointly have an impact on future operating cash flows (CFO_t). The earnings models of one-year lag, two-year lag, and three-year lag explain 21.45%, 21.47%, and 21.88% respectively of the variations of future operating cash flows. **For Saudi companies**, the F-statistics are significant (p-value not more than .003). This is an indication that the variables, EARN_{t-1}, EARN_{t-2}, and EARN_{t-3} jointly have an impact on future operating cash flows (CFO_t). The earnings models of one-year lag, two-year lag, and three-year lag explain 33%, 31.33%, and 29.88% respectively of the variations of future operating cash flows. However **the three-year lag** model had the highest predicting ability (Adj. R² = 21.88%) of future operating cash flows in **Egyptian companies**, and **the one-year lag** model had the highest predicting ability (Adj. R² = 33%) of future operating cash flows for **Saudi companies**.

For All companies, the F-statistics are significant (p-value = .000). This is an indication that the variables, EARN_{t-1}, EARN_{t-2}, and EARN_{t-3} jointly have an impact on future operating cash flows (CFO_t). The earnings models of one-year lag, two-year lag, and three-year lag explain 18.26%, 17.48%, and 17.27%, respectively, of the variations of future operating cash flows. For **all companies**, **the one-year lag** model had the highest predicting ability (Adj. R² = 18.26%) of future operating cash flows.

The Durbin Watson statistics were all close to 2, which is an indication that the residuals of the earnings regression model were uncorrelated and independent. The estimators of the earnings model are therefore reliable. So, the researcher therefore accepts the second hypothesis that **states that cur-**

rent earnings have significant ability predictive ability for future operating cash flows. This finding is consistent with findings of studies such as Greenberg et al (1986); Jordan and Waldron(2010); Ebaid (2011) and Jemaa et al. (2015).

To determine the better predictive ability, the researcher compared the statistics in table 4 against the statistics in table 5. Specifically, the t-statistics (and their P-values), the F-statistics (and their p-values), and the Adjusted R² in both models were compared.

On the basis of t-statistics, the cash flow model for Egyptian companies did better because t-values for CFO_{t-1} were statistically significant (6.288; 6.026 and 4.735) under all the year lags [one-year lag, two-year lag, and three-year lag respectively (See table 4)]. However t-values for EARN_{t-1} in table 5 were significant but their t-values were smaller(3.969; 3.917 and 4.086) under all the year lags one-year lag, two-year lag, and three-year lag respectively (See table 5).

On the other hand, **the cash flow model for Saudi companies** also did better because t-values for CFO_{t-1} were statistically significant (5.519 ;4.055 and 3.973)under all the year lags (one-year lag, two-year lag, and three-year lag respectively (See table 4). However t-values for EARN_{t-1} in table 5 were significant but their t-values were smaller(4.212 ;2.197 and 2.155) under all the year lags one-year lag, two-year lag, and three-year lag respectively(See table 5).

The cash flow model for All companies also did better because t-values for CFO_{t-1} were statistically significant (8.341 ;7.545 and 6.142) under all the year lags (one-year lag, two-year lag, and three-year lag respectively (See table 4). However t-values for EARN_{t-1} in table 5 were significant but their t-values were smaller(4.569 ;3.917 and 4.010) under all the year lags one-year lag, two-year lag, and three-year lag respectively (See table 5).

The t-values for CFO_{t-2} were statistically insignificant under the two-year lag and three-year lag respectively in the cash flow model and the earnings model whether for Egyptian or Saudi companies or All companies (See tables 4 and 5). However an inspection of the tables 4&5 for **Egyptian companies and All companies** indicate the t-value for CFO_{t-3} was significant (t-values= 2.122 and 2.706) respectively but the t-value for EARN_{t-3} was insignificant (t-value=-1.130 and -0.884) respectively .On the other hand, for **Saudi companies** the t-values for CFO_{t-3} and EARN_{t-3} were insignificant.

On the basis of F-statistics, **for Egyptian companies** the two models had F-statistics that were statistically significant (p values < 0.005). However **the cash flow model** in table 4 had bigger F-statistics (39.54; 20.19 and 15.87) under all the year lags compared to the F-statistics (15.75; 8.38 and 6.04) of **the earnings model** in table 5. On the other hand, **for Saudi companies** the two models had F-statistics that were statistically significant (p values < 0.005). However **the cash flow model** in table 4 had bigger F-statistics (30.46; 17.08 and 11.247) under all the year lags, compared to the F-statistics (17.740; 8.758 and 5.828) of **the earnings model** in table 5.

For All companies the two models had F-statistic that were statistically significant (p values < 0.005). However **the cash flow model** in table 4 had bigger F-statistics (69.580; 35.898 and 28.111) under all the year lags compared to the F-statistics (20.878; 10.427 and 7.194) of **the earnings model** in table 5

The adjusted R^2 is the best criteria for determining which model is better. The adjusted R^2 is an indication of the explanatory power of the models. **For Egyptian companies** a comparison of table 4 with table 5 shows that the cash flow model has higher adjusted R^2 than the earnings model (Cash flow model: 41.64% ; 41.55%; 45.23%: Earnings model: 21.45% ; 21.47% ;21.88%). On the other hand, **for Saudi companies** the cash flow model has higher adjusted R^2 than the earnings model (Cash flow model: 46.4% ;

48.60% ;47.5%: Earnings model: 33% ;31.33% 29.88%). **For All companies** the cash flow model has higher adjusted R^2 than the earnings model (Cash flow model: 43.52% ; 43.95% ;47.75%:Earnings model: 18.26% ;17.49% 17.27%). This is an indication that the cash flow model has a stronger explanatory power than the earnings model. Therefore **the researcher rejects the third hypothesis which states that current earnings have incremental predictive ability for future operating cash flows over current cash flows.** This finding is consistent with results of studies such as Finger (1994) ; Lorek and Willinger (1996); Quirin et al (1999); Al-Debie (2011) and Efayena (2015). However this finding is inconsistent with the findings such as Greenberg et al (1986); Jordan and Waldron(2010); Ebaid (2011) and Jemaa et al (2015).

On the other hand, the researcher conducted an additional analysis to differentiate the incremental explanatory power of cash flows (Inc. R^2 CFO) and the incremental explanatory power of earnings in predicting future cash flows. The researcher found that the incremental explanatory power of cash flows (Inc. R^2 CFO) is greater than the incremental explanatory power of earnings(Inc. R^2 EARN) in predicting future cash flows. Table 6 presents the incremental predictive ability of cash flows and accruals in predicting future cash flows.

Column (1) Adj. R^2 of CFO,EARN measure the explanatory power of the following regression model estimated by year:

- $CFO_{i,t} = \beta_0 + \beta_1 EARN_{i,t-1} + \beta_2 CFO_{i,t-1} + \epsilon_{i,t}$.
- $CFO_{i,t} = \beta_0 + \beta_1 EARN_{i,t-1} + \beta_2 CFO_{i,t-1} + \beta_3 EARN_{i,t-2} + \beta_4 CFO_{i,t-2} + \epsilon_{i,t}$.
- $CFO_{i,t} = \beta_0 + \beta_1 EARN_{i,t-1} + \beta_2 CFO_{i,t-1} + \beta_3 EARN_{i,t-2} + \beta_4 CFO_{i,t-2} + \beta_5 EARN_{i,t-3} + \beta_6 CFO_{i,t-3} + \epsilon_{i,t}$.

Column (2) Adj. R^2 CFO measures the explanatory power of the following regression model estimated by year:

- $CFO_{i,t} = \beta_0 + \beta_1 CFO_{i,t-1} + \epsilon_{i,t}$.
- $CFO_{i,t} = \beta_0 + \beta_1 CFO_{i,t-1} + \beta_2 CFO_{i,t-2} + \epsilon_{i,t}$.
- $CFO_{i,t} = \beta_0 + \beta_1 CFO_{i,t-1} + \beta_2 CFO_{i,t-2} + \beta_3 CFO_{i,t-3} + \epsilon_{i,t}$.

Column (3) Adj. R^2 EARN measures the explanatory power of the following regression model estimated by year:

- $CFO_{i,t} = \beta_0 + \beta_1 EARN_{i,t-1} + \epsilon_{i,t}$.
- $CFO_{i,t} = \beta_0 + \beta_1 EARN_{i,t-1} + \beta_2 EARN_{i,t-2} + \epsilon_{i,t}$.
- $CFO_{i,t} = \beta_0 + \beta_1 EARN_{i,t-1} + \beta_2 EARN_{i,t-2} + \beta_3 EARN_{i,t-3} + \epsilon_{i,t}$.

Column (4) Inc. R^2 .CFO (measures as Adj. R^2 CFO,EARN - Adj. R^2 EARN) refer to the incremental explanatory power of cash flows.

Column (5) Inc. R^2 . EARN (measures as Adj. R^2 CFO,EARN - Adj. R^2 CFO) refer to the incremental explanatory power of earnings.

Table 6: Incremental predictive ability for Cash flows using lagged Cash flows and Earnings

| I.Egyptian companies | | | | | |
|-----------------------------|---------------------------|----------------------|-----------------------|----------------------|-----------------------|
| Model | (1)Adj. R^2 CFO,EARN | (2)Adj. R^2 CFO | (3)Adj. R^2 EARN | (4)Inc. R^2 CFO | (5)Inc. R^2 EARN |
| One -year lag | 42.8% | 41.64% | 21.45% | 21.35% | 1.16% |
| Two -year lag | 41.9% | 41.55% | 21.47% | 19.43% | 0.35% |
| Three -year lag | 49.1% | 45.23% | 21.88% | 27.22% | 3.87% |
| II.Saudi companies | | | | | |
| Model | Adj. R^2 CFO,EARN | Adj. R^2 CFO | Adj. R^2 EARN | Inc. R^2 CFO | Inc. R^2 EARN |
| One -year lag | 46.42% | 46.40% | 33.00% | 13.42% | 0.02% |
| Two -year lag | 49.5% | 48.6% | 31.33% | 18.17% | 0.90% |
| Three -year lag | 48.7% | 47.5% | 29.88% | 16.82% | 0.1% |
| III.All companies | | | | | |
| Model | Adj. R^2 CFO,EARN | Adj. R^2 CFO | Adj. R^2 EARN | Inc. R^2 CFO | Inc. R^2 EARN |
| One -year lag | 43.63% | 43.52% | 18.26% | 25.37% | 0.11% |
| Two -year lag | 46.59% | 43.95% | 17.48% | 26.11% | 2.64% |
| Three -year lag | 51.30% | 47.75% | 17.27% | 34.03% | 3.55% |

5. Conclusion

This study has shown that current earnings and current cash flows are useful in predicting future cash flows of Egyptian companies and Saudi companies. The findings of this study do not support the assertion of the FASB (1978) and the IASB (1989) that current earnings are more superior than current cash flows in the prediction of future cash flows whether in Egyptian or Saudi companies. The study finds that cash flows information has more predictive ability than earnings information in predicting future cash flows in both countries. The results of this study are consistent with most studies conducted in developed countries, according to which the statement of cash flow prepared on a cash basis is more useful than the income statement prepared on an accrual basis that allows opportunistic manipulation by relying on more alternative accounting choices for predicting the future cash flows. This result has implications for academics, practitioners and policymakers because it questions previous beliefs about the usefulness of financial information and differs from what it is accepted that profits are better than cash flows in predicting future cash flows. The study provided a comparison between the predictive ability of earnings and cash flows for two samples from a developing country (Egypt) and from a developed country (Saudi Arabia). However, the study found the same results in the two countries.

References

- Arnedo, L., Lizarraga, F., & Sanchez, S. (2012). The role of accounting accruals for the prediction of future cash flows: evidence from Spain. *SERIE*, 3: 499–520. <https://doi.org/10.1007/s13209-011-0070-7>.
- Al-Attar, A., & Hussain, S. (2004). Corporate data and future cash flow. *Journal of Business Finance and Accounting*, 31(78), 861–903. <https://doi.org/10.1111/j.0306-686X.2004.00560.x>
- Al-Debi'e, M. M. (2011). Are operating cash flows a superior predictor of future operating cash flows than earnings? Evidence from Jordan. *European Journal of Economics, Finance and Administrative Sciences*, 40, 36–46.
- Barth, M.E., Cram, P.D., & Nelson, K.K. (2001). Accruals and the Prediction of FCFs. *The Accounting Review*, 76(1), 27–58.
- Beaver, W.H. (1989). *Financial Accounting: A Accounting Revolution*. Englewood. Cliffs, NJ: *Prentice-Hall*.
- Board, J. L. G., & Day, J. F. S. (1989). The information content of cash flow figures. *Accounting and Business Research*, 20(77), 3–11.
- Boritz, J., Kennedy, D., & Sun, J. (2007). Predicting business failure in Canada. *Accounting Perspective*, 141–165. <https://doi.org/10.1506/G8T2-K05V-1850-52U4>.
- Bowen, R. M., Burgstahler, D., & Daley, L. A. (1986). Evidence on the relationships between earnings and various measures of cash flow. *The Accounting Review*, 713–725.
- Call, A. C. (2008). Analysts' cash flow forecasts and the predictive ability and pricing of operating cash flows. *Available at SSRN 1362177*.

- Call, A.C., Chen.S., & Tong.Y.H. (2009). Are analysts' earnings forecasts more accurate when accompanied by cash-flow forecasts. *Review of Accounting Studies*, Vol.14, Issue 2/3,.358-391. <http://dx.doi.org/10.1007/s11142-009-9086-7>.
- Chen, C. W., Melessa, S., & Mergenthaler, R. D. (2017). Revisiting Measurement Error in Surrogate Measures of Operating Cash Flows: Have We Solved the Problem? https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3075461.
- Chong, K. W. (2012). Prediction of operating cash flows using accrual-based and cash-based accounting information among Malaysian industrial corporations, https://researchportal.scu.edu.au/discovery/delivery?vid=61SCU_INST:ResearchRepository&repId=1267075000002368#1367464320002368.
- Dechow, P. M., Kothari, S. P., & Watts, R. L. (1998). The relation between earnings and cash flows. *Journal of Accounting and Economics*, 25(2), 133-168.
- Dechow, P.M, & Dichev, I.D. (2001). The quality of accruals and earnings: The role of accruals estimation errors. *The Accounting Review*, Vol.77, 35-59. <http://dx.doi.org/10.2308/accr.2002.77.s-1.35>
- Dechow, P.M. (1994). Accounting earnings and CFs as measures of firm performance: The role of accounting accruals. *Journal of Accounting and Economics*, 18, 3-42.
- Dechow, P.M., & Skinner, D.J. (2000). Earnings management: reconciling the views of accounting academics, practitioners, and regulators. *The Accounting Horizons*, Vol.14, 235-251. <http://dx.doi.org/10.2308/acch.2000.14.2.235>.

- Efayena, O. (2015). The role of accrual accounting basis in the prediction of future cash flows: The Nigerian evidence. *Research Journal of Finance and Accounting*, 6 (4), 171-180.
- Farshadfar, S., & Monem, R., (2013). Further evidence on the usefulness of direct method cash-flow components for forecasting future cash-flows. *The International Journal of Accounting*, Vol.48,.111-133. <http://dx.doi.org/10.1016/j.intacc.2012.12.001>
- Farshadfar, S., Ng, C., & Brimble, M. (2008). The relative ability of earnings and cash flow data in forecasting future cash flows. *Pacific Accounting Review*, 20 (3), 251-268. <https://doi.org/10.1108/01140580810920236>.
- Finger, C. A. 1994. The ability of earnings to predict future earnings and cash flow. *Journal of Accounting Research* 32(2): 210-223.
- Finger, C.A. (1994). The ability of earnings to predict future earnings and cash flows. *Journal of Accounting Research*, 32 (2), 210-23. <https://doi.org/10.2307/2491282>
- Godfrey, J. M., Hodgson, A., & Holmes, S. (2003). *Accounting Theory*. Fifth edition. Milton, Queensland: *John Wiley & Sons Australia*.
- Greenberg, R.R., Johnson, G.L., & Ramesh. K. (1986). Earnings versus cash flows as a predictor of future cash flow measures. *Journal of Accounting, Auditing and Finance*, 1(4): 266-277.
- Habib, A. (2010). Prediction of operating cash flows: Further evidence from Australia. *Australian Accounting Review*, 2 (2), 134-143. <https://doi.org/10.1111/j.1835-2561.2010.00086.x>.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). Multivariate data analysis. *Pearson Prentice Hall. 7th Edition*

- Hammami, H., (2012). The use of reported cash-flows versus earnings to predict cash-flows: Preliminary evidence from Qatar. *The Business Systems Review*, Vol.1,103-121. <https://worldpopulationreview.com/countries/developed-countries/>
- Jemaa, O. B., Toukabri, M., & Jilani, F. (2015). The examination of the ability of earnings and cash flow in predicting future cash flows: Application to the Tunisian context. *Accounting and Finance Research*, 4(1).
- Jordan, C. E., & Waldron, M. A. (2001). Predicting cash flow from operations: Evidence on the comparative abilities for a continuum of measures. *Journal of Applied Business Research (JABR)*, 17(3). <https://doi.org/10.19030/jabr.v17i3.2237>
- Jordan, C., Waldron, M.A, & Clark, S.S. (2007). An analysis of the comparative predictive abilities of operating cash flows, earnings, and sales. *The Journal of Applied Business Research*, 23(3).
- Kim, M., & Kross, W. (2005). The ability of earnings to predict future operating cash flows has been increasing—not decreasing. *Journal of Accounting research*, 43(5), 753-780.
- Kremer, C., & Rizzuto, R. (2000). Three bottom lines. *Executive Excellence*, 17(9): 6-7.
- Krishnan, G. V., & Largay III, J. A. (2000). The predictive ability of direct method cash flow information. *Journal of Business Finance & Accounting*, 27(1-2), 215-245.
- Krishnan, Gopal V., & Largay Iii, James A. (2000). The Predictive Ability of Direct Method Cash Flow Information. *Journal of Business Finance & Accounting*, 27(1-2), 215-245. <https://doi.org/10.1111/1468-5957.00311>

- Lorek, K.S. & Willinger, G.L. (1996). A multivariate time-series prediction model for cash flow data. *The Accounting Review*, 71(1), 81-101.
- Moeinaddin, M., Ardakani, S., & Akhoondzadeh, F. (2013). Examination of the ability of earning and cash flow in predicting future cash flows. *Interdisciplinary Journal of Contemporary Research in Business*, 4, 94-101.
- Mulenga, M., & Bhatia, M. (2017). The review of literature on the role of earnings, cash flows and accruals in predicting of future cash flows. *Accounting and finance Research*, 6(2), 59-70.
- Nallareddy, S., Sethuraman, M., & Venkatachalam, M. (2018). Earnings or cash flows: Which is a better predictor of future cash flows?. *Available at SSRN 3054644*.
- Nam, S., Brochet, F., & Ronen, J. (2012). The predictive value of accruals and consequences for market anomalies. *Journal of Accounting, Auditing & Finance*, 27(2), 151-176.
- Quirin, J. J., O'Bryan, D., Wilcox, W.E., & Berry, K.T. (1999). Forecasting cash flow from operations: additional evidence. *The Mid-Atlantic Journal of Business*, 35(2-3), 135-142.
- Senan, N. A. M. (2019). Ability of Earnings and Cash Flows in Forecasting Future Cash Flows: A Study in the Context of Saudi Arabia. *Academy of Accounting and Financial Studies Journal*, 23 (1), 1-13.
- Shubita, M. (2013). The forecasting ability of earnings and operating cash flow. *Interdisciplinary Journal of Contemporary Research in Business*, 5(3). 442-456.

- Shyam, B.B., & Rajesh, I. (2013). Predicting business failure using cash flow statement based measures. *Managerial Finance*, 39 (7), 667-676. <https://doi.org/10.1108/03074351311323455>.
- Sloan, R. 1996. Do stock prices fully reflect information in accruals and cash flows about future earnings? *The Accounting Review*. 71:289–315.
- Takhtaei, N., & Karimi, H. (2013). Relative ability of earnings data and cash flow in predicting FCFs. *International Journal of Accounting and Financial Reporting*, 3 (1), 214–226.
- Vishnani, S., & Shah, K.B. (2008). Value relevance of published financial statements with special emphasis on impact of cash flow reporting. *International Research Journal of Finance and Economics*, 17 (3), 84–90.
- Waldron, M. A., & Jordan, C. E. (2010). The comparative predictive abilities of accrual earnings and cash flows in periods of economic turbulence: The case of the IT bubble. *Journal of Applied Business Research (JABR)*, 26 (1). <https://doi.org/10.19030/jabr.v26i1.279>
- Wasley, C.E. & Wu, J.S. (2006). Why do managers voluntarily issue CFFs? *Journal of Accounting Research*, 44 (2), 389–429.