

THE VALUE-RELEVANCE OF OPERATING CASH FLOW: COMPARATIVE STUDY OF BANKS' LISTED ON THE EGYPTIAN AND BEIRUT STOCK EXCHANGES

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ABSTRACT

This study examines whether the value relevance of Operating Cash Flows (OCF) varies between banks listed in the Egyptian Stock Exchange (ESE) as a representative of emerging markets and banks listed in the Beirut Stock Exchange (BSE) as a representative of frontier markets.

We test our hypotheses using a sample of 49 bank-year observations in the ESE, and a sample of 24 bank-year observations in the BSE for the 2013-2016 periods. Using the modified Ohlson's (1995) model, we find that OCF is positively and significantly associated with stock prices in the ESE and in the BSE. Furthermore, regression reveals that earnings are higher concerning value-relevant for banks listed in the ESE compared with the BSE.

Additionally, the Shapley value exposes the contribution of the interaction of OCF with banks' size to R^2 in the ESE. We provide empirical evidence that the OCF is value-relevant in emerging and frontier markets.

Keywords: Banks' Operating Cash Flows, Value-Relevance, Egyptian Stock Exchange, Beirut Stock Exchange.

INTRODUCTION

The period of financial crisis since 2007 and beyond has witnessed a debate on how to avoid another crisis. This debate has focused on credit rating and liquidity issues in the banking sector, re-evaluating the banks' assets and derivatives, considering fair value issues and activating the role of a bank's cash flow statements (Morris & Jie, 2016; Walton et al., 2009; Laux & Leuz, 2009). It was assumed that banks as financial institutions should be more interested in OCF (hereafter, OCF), which demonstrate financial resilience and liquidity, predicting distress, assessing risk, and clarifying the effect of accounting accruals that present the cash portion of accrual profits, and the reflection of that information on a bank's market value.

However, previous studies (e.g., Torfason, 2014; Mulford & EComisky, 2009) document those banks prepare a cash flow statement (including OCF) only to meet the preparation requirements in accordance with accounting standards (IAS, 7, 2010, para. A340). In addition, bankers believe that the statement of cash flow is inappropriate because of the different operational activities of banks from other sectors in terms of cash, which represent the original product of banks.

Färnemyhr & Lundström (2014) find that OCF activities with positive values in banks are expected to provide good indicators, that allow the bank to finance its activities, otherwise the bank will be inclined towards borrowing and possibly bankruptcy in the long term. Interestingly,

however, negative cash flows from operations of a bank may be interpreted as a sign of good performance, due to the bank's increased investment or expansion in lending, which represents its main revenue-generating activity. Under the accounting system, the loan is presented as an asset of the bank in return for creating the deposit as a liability.

The primary motivation behind this study is twofold. First, prior studies (Kwon, 2009; Penman & Sougiannis, 1998; Barth et al., 2017, 1999; Sloan, 1996; Dechow et al., 1998) empirically prove that OCF information has a positive correlation with stock prices in non-financial sectors; however, Ntoug et al. (2015), Kwon (2009) and Kim & Kross (2005) have pointed out the superiority of OCF over earnings. Nonetheless, the value-relevance of OCF information on the banking sector has not been explored in depth. Second, most previous studies are applied in the context of highly efficient capital markets¹ in Europe and the United States of America. Therefore, there is a need to test the same relation for banks listed on one of the emerging markets, such as the ESE and a frontier market, such as the BSE².

The reason for examining the financial reporting practices in the emerging and frontier capital markets addresses many needs. The most important need is the increasing demand for information that can be relied upon by investors in these markets as a result of globalization. In addition to the need to understand the relationship between factors affecting the reporting practices and respondent stocks behaviour in these markets, so as to contribute to the harmonization of accounting standards (Klimczak & Szafranski, 2013).

The objective of this study is to compare the value-relevance of the OCF for listed banks in the ESE and the BSE. Using the modified Ohlson's (1995) model, and through a longitudinal study over four years from 2013 to 2016 for a sample of 49 banks-year observations on the ESE and 24 banks-year observations on the BSE, we find a positive and significant association between OCF and stock price on the ESE and in the BSE. Additionally, we test for the influence of a bank's size as one of its operational characteristics on the value-relevance of OCF. The positive association holds after moderating size in the ESE.

Taken together, this study contributes to the existing literature by providing evidence that the banks' OCF have information content for investors in emerging and frontier capital markets. Furthermore, we show whether the simultaneous correlation of OCF with stock price vary according to bank's size.

The remainder of this paper is organized as follows. In the second section we review related literature and develop hypotheses. In the third section, we describe the research design and sample selection. We present the main empirical results of descriptive statistics and from testing the hypotheses in the fourth section. We conclude in the fifth section.

LITERATURE REVIEW AND HYPOTHESES

Banks prepare cash flow statement according to the requirements of accounting standards. A wide debate has been raised concerning its usefulness to banks. Bankers believe that the statement of cash flow is inappropriate because of the different operational activities of banks from the other sectors. However, investors may have different concerns. What about the importance of cash flow from investors' perspective, specifically, the reflection of OCF information content on a bank's market value?

OCF reflect the bank's ability to generate cash flows internally from main operations, and so can be used to measure its performance, and thereby affecting the value of its stocks. Cash flows from investing and financing activities are a function of OCF, as the OCF level will determine the need for external financing and future investment. Although OCF represents real

money compared to net income, there has been intense discussion in previous studies on the preference of value-relevance of OCF over the value-relevance of earnings. Freeman & Tse (1992) and Dimitropoulos et al. (2010) document that investors are looking for alternative measures, other than earnings, to evaluate performance, and cash flow has become a critical value variable. Moreover, OCF are the net inflows and outflows of main operating operations. Cash inflows are different from revenues because of the unearned and the credit portions, while the cash outflows are different from expenses due to prepaid and accrual expenses. Investors consider OCF to be more relevant than earnings due to the lower control of managers over cash flows compared to net income. This will result in a difference between the value-relevance of earnings and cash flows (Mirza et al., 2013).

Previous studies (Kwon, 2009; Choi & Jang, 2006; Penman & Sougiannis, 1998; Barth et al., 2001; Sloan, 1996; Dechow et al., 1998; Charitou et al., 2000) support the value-relevance of the information content of both OCF and accruals in the interpretation of market price movements, as well as earnings. Most of these studies excluded the banking sector when studying this relationship. However, generalizing these results on banks needs further empirical investigation due to the different legal status and accounting systems of banks.

A few previous studies examined the value-relevance of OCF in banks. Dimitropoulos et al. (2010), who examined the association between stock returns and OCF in Greek banks, found that the OCF have incremental value relevance further to earnings. Burke & Wieland (2017) document that OCF are positively and significantly associated with share prices by using a sample obtained from a major stock exchange (i.e., NYSE, NASDAQ or AMEX). However, the results of these studies can be generalized in similar capital markets in terms of efficiency as in the United States and in Europe. This raises the question of the materiality of this relationship in emerging and frontier capital markets.

Based on previous studies, it is possible to say that OCF have a significant positive effect on the stock market price due to the relevance of this information and its predictability and confirmability, considering the book values of the equity and accruals as control variables according to the modified Ohlson's (1995) model. Therefore, the first hypothesis can be posited as follows:

H1 OCF are significantly and positively associated with stock price.

By analogy, if OCF are value-relevant in relatively efficient markets, this indicates that they may be more value-relevant in the emerging Egyptian market than in the frontier Lebanese market. The second hypothesis can thus be derived as follows:

H2 OCF are more strongly associated with stock price in banks listed on the ESE than on banks listed on the BSE.

Previous studies have shown that the size of companies as an operational characteristic is an additional factor affecting the information content of earnings and OCF. Investors can therefore put greater trust in large companies and be more responsive to their financial reports. Charitou et al. (2001) indicates that if OCF information is available before earnings is disclosed, unforeseen OCF will be less valuable to large firms than to small firms. In contrast, Stevenson-Clarke and Hodgson (2000) argued that large firms are more likely to manage their financial statements because they have a greater range of accounting options, so earnings can be less valuable for large firms. As a result, investors will focus on alternative valuation measures such

as OCF. Dimitropoulos et al. (2010) suggest that the role of size is still controversial. Because of the unclear results on the nature of the impact of size on the relationship between OCF and stock market price, the third hypothesis can be formulated as follows:

H3 The size of the bank has a moderating effect on the relationship between OCF and stock price.

RESEARCH DESIGN

Data and Sample Selection

Our sample includes bank years listed on ESE and on the BSE between 2013 and 2016. We obtained annual consolidated financial statements data and annual stock price from banks' websites or through specialized platforms for equity market news and investor tools websites such as Mubasher Egypt³. We could not increase observations by depending on quarter data, because the Lebanese banks are not publishing quarter financial statements compared with the Egyptian banks.

This period was chosen to avoid the effect of the 25 January 2011 revolution in Egypt and the Lebanese Syrian crisis. These political crises had its negative repercussions that continued in 2012 on the Egyptian Stock Exchange, the Beirut Stock Exchange and the Lebanese banking sector. We removed observations with the missing stock price of Banque Du Caire, which had no trading activity during the study period, and excluded the observations of two banks because their reporting currency was not the Egyptian pound. Our final sample contained 49 bank-year observations (80% of population) from the ESE (Table 1). Concerning the BSE, final sample was comprised of 24 bank-year observations (100% of population) Table 1.

It is worth mentioning that the Egyptian banks prepare the statement of cash flow in accordance with the Central Bank of Egypt rules issued on December 16, 2008 (4: 212)⁴, which conform to Egyptian accounting standards (EAS) and are mainly consistent with International Accounting Standards. Lebanese banks are also in line with international accounting standards. IAS 7 gave financial corporations a special exception to the treatment of loans and interest due to the nature of their activities.

The importance of choosing the Egyptian and Lebanese banking sector is due to the vital role it plays in both countries and in the region. In Egypt, the banking sector includes 40 banks, with a branch network of 3,824 branches and 1058,261 employees by the end of 2015. Banks in Egypt are divided into three groups: 8 public banks, 12 private banks, and 20 Arab and foreign banks. The Egyptian Central Bank's encouragement of mergers between Egyptian banks has increased its size. By the end of the first half of 2016, the Egyptian banking sector is ranked fourth among the Arab banking sectors in terms of asset size and the ranked first among the banking sectors of the non-oil Arab countries⁵.

Table 1				
SAMPLE DISTRIBUTION				
By Year:				
<i>Population</i>	<i>No. of Obs.</i>			
ESE	2013	2014	2015	2016
1. Crédit Agricole Egypt	1	1	1	1
2. Commercial International Bank (Egypt)	1	1	1	1
3. Suez Canal Bank	1	1	1	1
4. Housing & Development Bank	1	1	1	1
5. Faisal Islamic Bank of Egypt - In EGP	1	1	1	1

Table 1				
SAMPLE DISTRIBUTION				
6. Egyptian Gulf Bank	1	1	1	1
7. Export Development Bank of Egypt (EDBE)	1	1	1	1
8. Qatar National Bank Alahly	1	1	1	1
9. Union National Bank - Egypt " UNB-E	1	1	1	1
10. Abu Dhabi Islamic Bank- Egypt	1	2 ⁽⁶⁾	1	1
11. Al Baraka Bank Egypt	1	1	1	1
12. National Bank of Kuwait- Egypt- NBK	1	1	1	1
Total (80 percent of population)	12	13	12	12
13. Faisal Islamic Bank of Egypt - In US Dollars	Excluded: \$ reporting currency			
14. Société Arabe Internationale De Banque (SAIB)	Excluded: \$ reporting currency			
15. Banque Du Caire	Excluded: No trading during study period			
BSE				
1. Blom Bank	1	1	1	1
2. Audi Bank	1	1	1	1
3. Bank of Beirut	1	1	1	1
4. BLC	1	1	1	1
5. BYBLOS Bank	1	1	1	1
6. BEMO	1	1	1	1
Total (100 percent of population)	6	6	6	6
By Country:				
Capital Market	No. of Obs.		% of Sample	
ESE	49		67.12%	
BSE	24		32.28%	
Total	73		100%	

The Lebanese banking sector is stable and dominates the financial system in Lebanon, as it represents the largest financier for individuals and institutions. The Lebanese banking sector includes 66 banks spread among 46 traditional commercial banks, 16 investment banks and five Islamic banks. By the end of 2016, the total number of bank branches operating in Lebanon was 1,078, with 25,260 employees. The Lebanese banking sector is one of the largest Arab and international banking sectors in terms of the size of the national economy. The total assets of the sector reached about four times the size of nominal GDP by the end of 2015. The deposit base, which includes the deposits of the private sector, is valued at about three times the gross domestic product⁷.

Models and Variable Measurements

To test our hypotheses, we use the following regression models based on the modified Ohlson's (1995) model:

$$P = a_0 + b_1 E_{it} + b_2 BV_{it} + \varepsilon_{it} \quad (1)$$

$$P = a_0 + b_1 OCF_{it} + b_2 ACC_{it} + b_3 BV_{it} + \varepsilon_{it} \quad (2)$$

$$P = a_0 + b_1 OCF_{it} + b_2 ACC_{it} + b_3 BV_{it} + b_4 Size_{it} + b_5 OCF_{it} * Size_{it} + \varepsilon_{it} \quad (3)$$

Where:

P =closing price per common share on the first trading day following the date of the auditor's report, based on Talkhan (2017).

Although most of previous studies used the price three months after financial year-end, we believe that this period varies from one bank to another according to the date of publishing of the financial statements which is associated with the end of the audit work. Therefore, the closing price for the first trading day following the date of the auditor's report is more consistent for to two reasons:

First, it can be used to measure the market reaction of reliable published accounting information. Second, according to our sample, more than 70% of the ESE banks published their consolidated financial statements during the second month after fiscal year-end. In contrast, more than 60% of the BSE banks published their consolidated financial statements during the fourth and fifth month after fiscal year-end.

E =earnings per share.

BV =book value of common equity per share, according to Ohlson (1995).

OCF =cash flow from operations per share.

ACC =the total accruals per share, calculated as the difference between earnings per share and operating cash flows per share ($ACC=E-OCF$).

$Size$ =the natural log of total assets.

All variables are adjusted for stock splits and dividends.

Subscript i and t denote bank and year, respectively.

A positive and significant coefficient b_1 in equation (2) supports the value relevance of OCF in banks. In addition, b_5 in equation (3) reflects the effect of size on the value-relevance of OCF .

RESULTS

Descriptive Statistics

Table 2 presents the descriptive statistics for the ESE sample (Panel A) and BSE (Panel B). As shown in Panel A, the average of stock price for ESE is 14.151, with a standard deviation of 13.78740. The mean value of OCF and ACC are 11.238574 (in thousands of Egyptian Pounds) and -8.357347 respectively, which are together represent earnings (E) (mean=2.881429). The average of BV is 12.44916 with a standard deviation of 8.276585. The mean of bank size is 17.3219 with a standard deviation of 0.81143. Finally, the mean of $OCF*Size$ is 196.8912 which is comprised of OCF and $Size$.

Panel B of Table 2 shows that banks listed in the BSE as a frontier market has the average of stock price of 10,029, with a standard deviation of 9634.408. The mean value of OCF is 535.646 (in millions of Lebanese Pounds) per share with a standard deviation of 10948.058, which reflects the dispersion among banks listed on the BSE. The average of earnings (E) is 1850.44 with a standard deviation more than the mean of 1866.361. The average of BV is 15491.243 with a standard deviation of 15873.989. The mean of bank size is 16.712 with a standard deviation of 1.125 closes the lower dispersion of banks' size listed on the BSE. Finally, the mean of $OCF*Size$ is 7635.183 which is comprised of OCF and $Size$.

Panel C of Table 2 displays that the differences in the mean and median values of OCF between the ESE and the BSE are not statistically significant, indicating that the emerging market and frontier markets represented in this study have the same reaction toward OCF . On the other hand, E , BV show differences in mean and median values between the ESE and the BSE which are statistically significant at the 1% levels, indicating the differences between emerging

market and frontier markets concerning these variables. Finally, the results also show that banks listed in the ESE have a higher size compared to the banks listed in the BSE.

Table 2 DESCRIPTIVE STATISTICS							
Panel A: Descriptive statistics for ESE firm year observations (n=49)							
Variable	Min.	Max.	Mean	Std. Dev.	Median		
<i>P</i>	0.94	76.17	14.1510	13.78740	8.74		
<i>OCF</i>	-45.535	44.4518	11.238574	17.8791769	11.83		
<i>BV</i>	2.318	53.541	12.44916	8.276585	10.334		
<i>E</i>	0.000	12.1200	2.881429	2.4021692	2.35		
<i>ACC</i>	-40.89	57.1600	-8.357347	18.7643935	-8.5		
<i>Size</i>	15.73	19.40	17.3219	0.81143	17.13		
<i>OCF * Size</i>	-810.75	765.77	196.8912	315.56620	207.49		
Panel B: Descriptive statistics for BSE firm year observations (n=24)							
Variable	Min.	Max.	Mean	Std. Dev.	Median		
<i>P</i>	1395	28500	10029	9634.408	6000		
<i>OCF</i>	-19220.3	33224.64	535.646	10948.058	65.648		
<i>BV</i>	809.7380	50081.012	15491.243	15873.989	12937.38		
<i>E</i>	117.72	6133.30	1850.44	1866.361	1040.71		
<i>ACC</i>	-28618.66	25353.60	1314.8	11048.620	874.56		
<i>Size</i>	14.62	18.02	16.712	1.125	17.10		
<i>OCF * Size</i>	-328116.28	559412.37	7635.183	185718.57	1146.03		
Panel C: Comparing ESE versus BSE							
Variable	t-test		Mann-Whitney test				
<i>P</i>	<0.000		<0.000				
<i>OCF</i>	0.737		0.925				
<i>BV</i>	<0.000		<0.000				
<i>E</i>	<0.000		<0.000				
<i>ACC</i>	0.401		0.250				
<i>Size</i>	<0.010		0.181				
<i>OCF * Size</i>	0.778		0.925				
Panel D: Correlation Matrix (The ESE/The BSE, above/below the diagonal line)							
Variable	<i>P</i>	<i>CFO</i>	<i>Size*CFO</i>	<i>E</i>	<i>BV</i>	<i>ACC</i>	<i>Size</i>
<i>P</i>	1	0.155	0.187	0.455**	0.187	-0.089	0.704**
<i>CFO</i>	0.114	1	0.999**	-0.307*	-0.379**	-0.992**	0.156
<i>Size*CFO</i>	0.113	1.000**	1	-0.291*	-0.374**	-0.989**	0.189
<i>E</i>	0.985**	0.031	0.030	1	0.807**	0.421**	0.593**
<i>BV</i>	0.564**	0.072	0.064	0.588**	1	0.465**	0.298*
<i>ACC</i>	0.054	-0.986**	-0.986**	0.138	0.028	1	-0.072
<i>Size</i>	0.420*	-0.112	-0.112	0.446*	-0.132	0.186	1
Notes:							
Variable definitions = closing price per common share on the first trading day following the date of the auditor's report. <i>E</i> = earnings per share; <i>BV</i> = book value of common equity per share, according to Ohlson, (1995); <i>OCF</i> = cash flow from operations per share; <i>ACC</i> = the total accruals per share, calculated as the difference between earnings per share and operating cash flows per share ($ACC = E - OCF$); <i>Size</i> = the natural log of total assets. All variables are adjusted for stock splits and dividends. Subscript <i>i</i> and <i>t</i> denote bank and year, respectively. *, **, and *** represent significance levels of 10 percent, 5 percent, and 1 percent (two-tailed), respectively.							

Panel D of Table 2 reports the Correlation Matrix. Stock prices in both the ESE and the BSE are positively related to *OCF* but not statistically significant, with a Pearson correlation coefficient of 0.155 and 0.114. *ACC* in the ESE is negatively associated with stock prices consistent with prior studies. While stock prices in the BSE is insignificantly positively related to

ACC, with a Pearson correlation coefficient of 0.054. Although the Pearson correlation coefficient of *OCF* in the ESE is more than in the BSE, but the insignificant association indicates that a bank's *OCF* are not associated with stock prices in both emerging and frontier markets. These results reject *H2*.

It is obvious that earnings are the predominant variable that affects stock prices in both the ESE and the BSE, consistent with prior studies in developed markets with a positive and significant relation. The correlation between stock prices and book value of equity (*BV*) in the ESE is not statistically significant, whereas *BV* in the BSE is significantly and positively correlated with stock prices (*P*). As shown in the columns for Size in Panel D, Size in both the ESE and the BSE are positively and significantly correlated with stock prices (*P*).

Regression Analysis

Value-relevance of earnings-Model (1)

According to model (1), and before decomposing earnings into *OCF* and total accrual, Panel A of Table 3 reports the value relevance of earnings in both listed banks on both the ESE and the BSE. This result is consistent with many previous studies regarding the developed capital markets (e.g., Ou & Penman, 1993; Dechow, 1994; Ohlson, 1995; Penman, 1996; Barth & Kallapur, 1996).

Value-relevance of OCF-Model (2)

Panel B and Panel C of Table 3 display the results from examining the valuation usefulness of *OCF* using the basic model (2). We find the coefficients of *OCF* are positive and significant at the 1% level, suggesting that *OCF* are value relevant on banks listed on the ESE and banks listed on the BSE. These results support *H1* and reject *H2*.

Furthermore, we find that banks listed on both the ESE and the BSE have high total accruals similar to *OCF*, which is inconsistent with prior studies (Burke & Wieland 2017; Choi & Jang 2006; Sloan 1996) that document weaker value-relevance of total accruals than *OCF*. Additionally, inconsistent with prior studies (Burke & Wieland, 2017; Collins et al., 1997; Ohlson, 1995), we find negative and insignificant coefficients on *BV*.

Although the regression results support *H1*, we improve result by using the Shapely value analysis. The Shapely value is a robust tool over ordinary regression techniques in handling the problem of high multicollinearity between independent variables. The Shapely value analysis presents an accurate decomposition of the total (R^2), which enable us to recognize the contribution of each independent variable to the model (Mishra, 2016).

Panel C of Table 3 shows the findings of Shapely Value. The results confirm that the *OCF* as having relative importance as an explanatory variable, with shapely value 16.2% and 38.1% out of the total R^2 , in both the ESE and the BSE⁸.

Moderating effect of Size-Model (3)

Hypothesis 3 predicts that the size of the bank has a moderating effect on the relationship between *OCF* and stock price. As shown in Panel A of Table 4, the coefficients of interaction for *OCF*Size* is positive and significant at the 1% level in the ESE, while it is positive and insignificant in the BSE. Furthermore, the magnitude of *OCF*Size* in the ESE

(coefficient=-0.445) is greater than that of $OCF*Size$ in the BSE (coefficient=-0.073). These findings support $H3$ and indicate that the interaction of size plays a vital role on the relation between stock market prices and OCF in banks listed in emerging markets than in frontier markets.

Table 3				
REGRESSION RESULTS WITHOUT MODERATING SIZE				
Panel A: Before decomposing earnings into OCF and total accrual				
$P = a_0 + b_1 E_{it} + b_2 BV_{it} + \varepsilon_{it}$ (1)				
	<u>ESE</u>		<u>BSE</u>	
Variable	Coefficients	t-statistics	Coefficients	t-statistics
constant	10.648	3.477	710.700	1.336
BV	-0.862	-2.477	-0.015	-0.517
E	4.983***	4.177	5.157***	21.586
N	49		24	
F	9.88***		346.38***	
Adjusted R ² (%)	27%		96.8%	
Panel B: After decomposing earnings into OCF and total accrual				
$P = a_0 + b_1 OCF_{it} + b_2 ACC_{it} + b_3 BV_{it} + \varepsilon_{it}$ (2)				
	<u>ESE</u>		<u>BSE</u>	
Variable	Coefficients	t-statistics	Coefficients	t-statistics
constant	3.422	0.799	937.257	1.287
OCF	4.559***	3.962	5.266***	21.394
BV	-0.376	-1.083	-0.038	-1.298
ACC	4.329***	3.771	5.210***	21.149
N	49		24	
F	8.457***		179.15**	
Adjusted R ² (%)	31.3%		96%	
Panel C: Results based on the Shapely Value Analyses (without moderating Size)				
	<u>ESE</u>		<u>BSE</u>	
Variable	Effect	Shapely Value	Effect	Shapely Value
OCF	0.246	0.162	0.381	0.381
BV	0.040	0.054	0.260	0.211
ACC	<u>0.075</u>	<u>0.144</u>	<u>0.337</u>	<u>0.380</u>
Total	0.361	0.36	0.978	0.972
n	49		24	
Notes:				
Variable definitions = closing price per common share on the first trading day following the date of the auditor's report. E = earnings per share; BV = book value of common equity per share, according to Ohlson, (1995); OCF = cash flow from operations per share; ACC = the total accruals per share, calculated as the difference between earnings per share and operating cash flows per share ($ACC = E - OCF$); $Size$ = the natural log of total assets. All variables are adjusted for stock splits and dividends. Subscript i and t denote bank and year, respectively. *, **, and *** represent significance levels of 10 percent, 5 percent, and 1 percent (two-tailed), respectively.				

Panel B of Table 4 represents the findings of Shapely Value Analyses. The results show that $OCF*Size$ has incremental R² in the ESE of 16.2% while in the BSE is 12.8%. The relative importance of $OCF*Size$ does not increase the robustness of the results in Panel A of Table 4. In the ESE the main relative importance variable is Size as a control variable, while ACC is the main relative importance variable in the BSE. These findings partially support $H3$.

Table 4
MODERATING EFFECT OF SIZE

Panel A: Regression Results with moderating Size				
$P = a_0 + b_1 OCF_{it} + b_2 ACC_{it} + b_3 BV_{it} + b_4 Size_{it} + b_5 OCF_{it} * Size_{it} + \varepsilon_{it} \quad (3)$				
Variable	ESE		BSE	
	Coefficients	t-statistics	Coefficients	t-statistics
constant	-56.764	-0.990	9347.407	1.170
OCF	-6.356***	-2.831	6.814***	3.493
BV	0.081	0.281	-0.065	-1.697
ACC	1.330	1.065	5.515***	15.111
Size	3.744	1.103	-520.489	-1.054
OCF * Size	0.445***	3.899	-0.073	-0.696
N	49		24	
F	14.929***		99.564**	
Adjusted R ² (%)	59.4%		95.7%	
Panel B: Results based on the Shapely Value Analyses (with moderating Size)				
Variable	ESE		BSE	
	Effect	Shapely Value	Effect	Shapely Value
OCF	0.004	0.109	0.117	0.132
BV	0.010	0.027	0.292	0.205
ACC	0.018	0.082	0.289	0.393
Size	0.443	0.255	0.179	0.122
OCF * Size	<u>0.162</u>	<u>0.162</u>	<u>0.101</u>	<u>0.128</u>
Total	0.637	0.635	0.978	0.98
n	49		24	

CONCLUSION

We examined the association of OCF with stock prices in banks listed on the ESE as one of emerging capital markets and on the BSE as a representative of frontier capital markets. We also investigated how this relation is affected by a bank's size. We find evidence that OCF have informative content in both markets with a positive and significant relationship with share price. The Shapely value shows that OCF are relatively more important than the total accrual with respect to stock prices. We find that value relevance of OCF vary with banks' size in the ESE but not in the BSE. The Shapely Value shows that *OCF*Size* is not relatively the main importance variable in both samples.

This study contributes to prior research by providing an empirical analysis of the usefulness of OCF in banks that are rarely examined.

We believe that the findings have potential impacts on the financial markets. If these findings highlight investor awareness concerning the impact of OCF, it explains the efficiency level of the Egyptian and Lebanese banking sector.

The generalization of the search results is subject to the criteria of selecting the sample and the used methodology. Therefore, the results open a road to further researches.

The relationship was analyzed within a certain period (from 2013 until 2016) following the political crises in Egypt and Syria. These events began in 2011 and resulted in significant consequences for the Egyptian Stock Exchange, the Beirut Stock Exchange and the Lebanese banking sector in 2012. Future research could conduct a comparative study of the same relationship before and after this period in Egypt and Lebanon, and then compared to many other emerging markets, in African and Middle Eastern countries.

The current research also focused on the cash flows from operating activities. This gives an opening for future research to analyze the relationship of other components of the cash flow statement from investment and financing, on the one hand, and their determinants on the other hand.

ENDNOTES

- 1 At least a semi-strong form (Fama, 1970).
- 2 In September 2017, the Egyptian Stock Market was classified as an emerging market according to the FTSE stock market classification. For more details on the rating criteria refer to: http://www.ftse.com/products/downloads/FTSE-Country-Classification-Update_latest.pdf.
The same classification was achieved on 24/5/2016 according to the S & P DJI benchmark indices, while the Beirut Stock Market was classified as a frontier market. For further details, refer to: <https://us.spindices.com/documents/index-news-and-announcements/20160602-spdji-country-classification-consultation.pdf>
- 3 <https://www.mubasher.info/countries/eg>, <https://alborsanews.com>, and <https://sa.investing.com/equities>
- 4 <http://www.cbe.org.eg/en/BankingSupervision/Pages/PresentationAndPreparation.aspx>
- 5 Source <http://www.uabonline.org>
- 6 Reissued 2014 consolidated financial statement.
- 7 Source <http://www.abl.org.lb/ar/subPage.aspx?pageid=7339>
- 8 The slight difference in R^2 shown in Panel A and B is due to two reasons. First: Adjusted R^2 reported in Panel A and B, while R^2 stated in Panel C. Second: the results in Panel A and B are reported from AR (1) model, which is a linear regression model that uses lagged variables as input variables (Brownlee 2018).

REFERENCES

- Barth, M., Li, K., & McClure, C. (2017). Evolution in value relevance of accounting information. Stanford University, Graduate School of Business Research Paper No. 17-24.
- Barth, M.E., Cram, D.P., & Nelson, K.K. (2001). Accruals and the prediction of future cash flows. *The Accounting Review*, 76(1), 27-58.
- Barth, M., & Kallapur, S. (1996). The effects of cross-sectional scale differences on regression results in empirical accounting research. *Contemporary Accounting Research*, 13(2), 527-567.
- Burke, Q.L., & Wieland, M.M. (2017). Value relevance of banks' cash flows from operations. *Advances in Accounting*, 39, 60-78.
- Brown, S., Lo, K., & Lys, T.Z. (1999). Use of R^2 in accounting research: measuring changes in value relevance over the last four decades. *Journal of Accounting and Economics*, 28(2), 83-115.
- Brownlee, J. (2018). Introduction to time series forecasting with python. Retrieved February 15, 2018: <https://machinelearningmastery.com/introduction-to-time-series-forecasting-with-python/>
- Charitou, A., Clubb, C., & Andreou, A. (2000). The value relevance of earnings and cash flows: Empirical evidence from Japan. *Journal of International Financial Management and Accounting*, 11(1), 1-22.
- Charitou, A., Clubb, C., & Andreou, A. (2001). The effect of earnings permanence, growth and firm size on the usefulness of cash flows in explaining security returns: empirical evidence for the UK. *Journal of Business Finance and Accounting*, 28(5-6), 563-594.
- Choi, H., & Jang, S. (2006). The relative value-relevance of earnings and cash flow measures in each life-cycle stage. Korean. *Management Review*, 35(5), 1339-1360.
- Collins, D.W., Maydew, E.L., & Weiss, I.S. (1997). Changes in the value relevance of earnings and book values over the past forty years. *Journal of Accounting and Economics*, 24(1), 39-67.

- Dechow, P.M. (1994). Accounting earnings and cash flows as measures of firm performance: the role of accounting accruals. *Journal of Accounting and Economics*, 18(1), 3-42.
- 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.
- Dimitropoulos, P.E., Asteriou, D., & Koumanakos, E. (2010). The relevance of earnings and cash flows in a heavily regulated industry: evidence from the greek banking sector. *Advances in Accounting*, 26(2), 290-303.
- Fama, F. (1970). Efficient capital markets: a review of theory and empirical work. *The Journal of Finance*, 25(2), 383-417.
- Färnemyhr, A., & Lundström, J. (2014). Negative operating cash flows-a signal for well-performing commercial banks? A quantitative correlational study of Eurozone banks. Bachelor's thesis in Accounting, School of Business, Economics and Law, University of Gothenburg, Sweden.
- Freeman, R.N., & Tse, S.Y. (1992). A nonlinear model of security price responses to unexpected earnings. *Journal of Accounting Research*, 30(2), 185-209.
- International Accounting Standards (1992). IASB *Statement of Cash Flows-IAS 7*. London, UK.
- International Accounting Standards (2010). IASB *The Conceptual Framework for Financial Reporting*. London, UK.
- 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), 753-80.
- Klimczak, K.M., & Szafranski, G. (2013). Coincident and forecast relevance of accounting numbers. *Accounting Research Journal*, 26(3), 239-255.
- Klimczak, K. (2009). Testing value relevance of accounting earnings in emerging markets. Working paper on SSRN. Retrieved November 17, 2017.
- Kwon, G.J. (2009). The value relevance of book values, earnings and cash flows: evidence from Korea. *International Journal of Business and Management*, 4(10), 28-42.
- Laux, C., & Leuz, C. (2009). The crisis of fair-value accounting: making sense of the recent debate. *Accounting, Organizations and Society*, 34(6-7), 826-834.
- Mishra, S.K. (2016). Shapley value regression and the resolution of multicollinearity, *Journal of Economics Bibliography*, 3(3), 498-515.
- Mirza, N., Afzall, A., Rizvi, S.K.A., & Naqvi, B. (2013). Can current earnings predict future cash flows? A literature survey. *Research Journal of Recent Sciences*, 2(2), 76-80.
- Morris, R.D., Kang, H. & Jie, J. (2016). The determinants and value relevance of banks' discretionary loan loss provisions during the financial crisis. *Journal of Contemporary Accounting & Economics*, 12(2), 176-190.
- Mulford, W., & Comisky, E. (2009). Cash flow reporting by financial companies: a look at the commercial banks. Georgia tech financial analysis lab. College of Management, Georgia.
- Ntoug, L., Irene, P., & Cibran, P. (2015). Operating cash flow and earnings under IFRS/GAAP: Evidence from Australia, France & UK. Working paper on SSRN.
- Ohlson, J.A. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research*, 11(2), 661-687.
- Ou, J.A., & Penman, S. (1993). Fundamental statement analysis and the evaluation of market-to-book ratio. Working Paper, Santa Clara, CA: Santa Clara University.
- Penman, S.H. (1996). The articulation of price-earnings ratios and market-to-book ratios and the evaluation of growth. *Journal of Accounting Research*, 34(2), 235-259.
- Penman, S., & Sougiannis, T. (1998). A comparison of dividend, cash flow, and earnings approaches to equity valuation. *Contemporary Accounting Research*, 15(3), 343-83.
- Sloan, R.G. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings? *The Accounting Review*, 71(3), 289-315.
- Stevenson-Clarke, P., & Hodgson A. (2000). Earnings, cash flows and returns: functional relations and the impact of firm size. *Accounting and Finance*, 40(1), 51-74.
- Talkhan, A. (2017). The effect of adopting international financial reporting standards on the relationship between accounting information and measuring the value of the company-an empirical study on listed companies in the Egyptian stock exchange. Unpublished doctoral dissertation, Alexandria University, Egypt.
- Torfason, A. (2014). Cash flow accounting in banks a study of practice. Unpublished doctoral dissertation, University of Gothenburg, Sweden.
- Walton, P., André, P., Cazavan-Jeny, A., Dick, W., & Richard, C. (2009). Fair value accounting and the banking crisis in 2008: shooting the messenger. *Accounting in Europe*, 6(1), 3-24.