

The Value Relevance of IFRS in the UAE Banking Industry: Empirical Evidence from Dubai Financial Market, 2008-2013

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Abstract *The objective of this paper is to examine the value relevance of accounting information for the banks listed in the Dubai Financial Market (DFM) for the period 2008 - 2013. Empirical tests are based on the return and the price models. Overall, the results show that accounting information is associated with market valuation. The earnings are positive and significantly related to stock prices and stock returns. Moreover results indicate that value relevance of accounting information has changed since 2008 which might raise the effect of the Global Financial Crisis (GFC). Finally, the explanatory power of earnings and equity book value are found to decrease during the recovery period 2011-2013.*

Key words Value relevance, Accounting information, IFRS, DFM, Banking

DOI: 10.6007/IJARAFMS/v4-i4/1241

URL: <http://dx.doi.org/10.6007/IJARAFMS/v4-i4/1241>

1. Introduction

Value relevance of financial information is its ability to be useful to the capital providers in the taking decision process. Financial reporting based on IFRS provides accounting harmonization and it is expected to communicate higher information quality. In fact the purpose of establishing IFRS is to develop an internationally acceptable set of high quality financial accounting standards. The general method used by the accounting literature to assess the quality of accounting numbers is to test its relevance to market valuation. It means that there is a significant association degree between information disclosed by financial accounting and the stock market valuation. Most empirical studies are based on the model of Ohlson (1995) and its subsequent refinements. Their results are in general showing a positive effect of IFRS adoption (Bartov *et al.* (2005), Barth *et al.* (2008) and Alali and Foote (2012)). However other studies show opposite evidence (Barth *et al.* (2006) and Khanagha (2011)).

In UAE, the accounting profession is represented by the Accountants and Auditors Association. In the UAE companies prepare their annual financial statements within 2 to 3 months of the end of the fiscal year: Aljifri and Hussainey (2007). For the banking industry, according to Central Bank Circular No 20/99, banks, financial institutions and investment companies in the UAE are required to prepare their financial statements in accordance with the International Accounting Standards with effect from January 1, 1999. In 2006, the Dubai International Financial Centre legal framework requires banks and companies listed on the Dubai International Foreign Affairs to implement IFRS: Khanagha (2011). All banks listed on DFM are required to prepare their financial statements in accordance with IFRS.

The main objective of this paper is to examine the value relevance of accounting information prepared using International Financial Reporting Standards (IFRS) for a sample of 12 banks listed in the Dubai Financial Market (DFM) during the period 2008-2013. This is done using standard value-relevance models: Easton and Harris (1991) and Feltham and Ohlson (1995) the value relevance is measured by the association degree between accounting information and market valuation of the listed banks. The net income is considered as the most important information communicated by financial statements. It measures the performance of the business during a given period according to accounting standards. In the other side, the market provides a

performance measurement of the business for the same period based on market prices. Thus a high association degree between these two sets of information supports the confirmatory value and though the predictive value of accounting numbers.

Regarding the empirical investigation, the analysis results show, overall, that earnings are positively related to stock prices and stock returns. The association degree between earnings and stock returns is relatively high. However findings are not consistent over the different years of the whole period 2008-2013. Results indicate that value relevance of accounting information has changed since 2011 which might raise the effect of the global financial crisis (GFC). This study contributes to the literature on the value relevance of accounting information and to the debate over the mandatory adoption of IFRS.

2. Literature Review

The IASB conceptual framework considers relevance as a fundamental quality of accounting information. The related literature considers relevant information as very useful for decision making. Several contributions examined the value relevance of accounting numbers. The major interest was for the analysis of earnings considered as the most important information used by capital providers and for Beaver (1989) "*No other figure in the financial statements receives more attention by the investment community than earnings per share. This relationship between accounting earnings and security prices is probably the single most important relationship in security analysis, and its prominence is reflected in the attention given to price-earnings ratios*". Earnings information is considered as relevant if it is useful to firm valuation. This field of research in accounting started by the seminal work of Ball and Brown (1968) and followed by many others: Lev (1989), Livnat and Zarowin (1990), Chan and Seow (1996).

Association studies had been also used in order to assess the value relevance of accounting information prepared under IFRS. The first empirical studies were interested on the voluntary adoption of IFRS by companies. The subsequent studies examined their value relevance for samples of firms after the mandatory adoption. Dumontier and Raffournier (1998) identified the motivations of Swiss listed companies to voluntarily comply with IAS for financial reporting. The results show that firms which comply with IAS are larger, more internationally diversified, less capital intensive and have a more diffuse ownership. Cuijpers and Buijink (2005) studied the economic consequences of voluntary adoption of IFRS or US GAAP for a sample of European companies. Findings indicate that there is no evidence of a lower cost of capital for non-local GAAP adopters. Using a sample of companies that voluntarily adopt IAS from 1999 to 2002 in 29 countries, the study of Covrig *et al.* (2007) is testing whether foreign investors are differentially attracted to companies that voluntarily adopt IAS. The authors used foreign mutual fund ownership as a proxy for foreign investor preferences. Results indicate that foreign mutual fund ownership is higher among firms using IAS compared to firms using local accounting standards. Furthermore the findings indicate that companies in poorer information environments and with lower visibility have higher levels of foreign investment voluntarily comply with IAS in order to provide more relevant information to foreign investors. More recently Şenyiğit (2014) analyzed the determinants of voluntary IFRS adoption by a sample of listed companies in Turkey during the transition period: 2003. Results are consistent with those from previous studies: firm size, international exposure, and type of auditor are important drivers of the voluntary IFRS adoption.

Accounting research has examined the value relevance of accounting information for companies for which the reference to IFRS in financial reporting is mandatory. The first papers had been conducted for samples of companies listed in European Union (EU) stock markets. In fact, since January 2005 all listed companies in the EU have been required to prepare their consolidated financial statements in accordance to IFRS. Overall the findings indicate an improvement in the quality of accounting numbers prepared under IFRS. Armstrong *et al.* (2010) and Li (2010) indicate that using IFRS contribute in decreasing the information asymmetry and cost of capital. The study of Bartov *et al.* (2005) analyzes a sample of German firms. Their findings support the improvement of accounting information quality for firms switching to IFRS. Several studies examining the effect of mandatory IFRS on earnings quality provide similar conclusions. Using a sample of UK firms, Latridis (2010) shows that the introduction of IFRS decreased the level of earnings management and improved the relevance of accounting figures. Similar results are shown in papers examining samples of French firms: Lenormand and Touchais (2009) and Italian companies: Paglietti (2009) and Cameron *et al.* (2014). Agostino *et al.* (2011) examined a sample of European banks. They analyzed the

market valuation of certain accounting figures, earnings and equity, before and after the adoption of IFRS. Results indicate that the transition to IFRS improved the information content of both earnings and book value for more transparent banks.

The use of IFRS by companies throughout the world has considerably increased during the last 10 years. Since 2001, almost 120 countries have required or permitted the use of IFRS: IASB (2014). The purpose in the adoption of IFRS is to improve the comparability and transparency of the financial information disclosed. Thereby, the models allowing to examine the value relevance of accounting information prepared under IFRS have been tested empirically in different countries: Jain (2011) and Kamath and Desai (2014) in India, Kargin (2013) and Balsari and Varan (2014) in Turkey, Chalmers *et al.* (2011), Chua *et al.* (2012), Kang and Gray (2013) and Morris *et al.* (2014) in Australia, Chunhui *et al.* (2011) in China and Kim (2013) in Russia.

Examining a sample of Indian firms Kamath and Desai (2014) investigate the effect of IFRS adoption on financial activities. The results show that financial indicators have been significantly affected by the adoption of IFRS. Capital markets research in China: Chunhui *et al.* (2011) indicates that the quality of earnings, significantly improved with the adoption of IFRS. In addition they support the decrease in earnings smoothing. Similar results are shown in capital markets research done in Turkey. On average there is a positive impact of IFRS adoption: Morris *et al.* (2014). Moreover, research on the application of IFRS for SMEs reveals that there are technical issues such as fair value measurements: Uyar and Gungormus (2013) and Albu *et al.* (2013). Kang and Gray (2013) analyzed the incremental effect of the application of a specific IFRS: operating segments. Results show that the number of reportable segments and the extent of disclosure have increased after the adoption of the new standard. Analyzing a sample of Russian firms Kim (2013) concluded that the mandatory IFRS adoption in Russia is likely to result in improved information quality.

Previous studies examined the value relevance of accounting information for firms listed in UAE stock markets. Khanagha (2011) examined the value relevance of earnings and equity for a sample of companies listed in Abu Dhabi stock market during the period 2001-2008. The author analyzed the explanatory power of accounting numbers in pre and post-periods of IFRS adoption. The results reveal that accounting information is value relevant in UAE stock market. However, the comparison of the results for the periods before and after their adoption indicates a decrease in value relevance of accounting information during the post-period. Different results are shown by Alali *et al.* (2012). For a sample of firms listed in Abu Dhabi stock market during 2001-2006, findings indicate that earnings and book value are associated with the market valuation. In addition the study reveals that the value relevance of accounting information prepared under IFRS has increased.

3. Methodology of research

To examine the value relevance of accounting information using IFRS for banks listed in DFM, the paper uses two valuation models; Easton and Harris (1991) and Feltham and Ohlson (1995). These models have been widely used in the literature related to value relevance measurement. Specifically, Easton and Harris (1991) developed a return model while Feltham and Ohlson (1995) presented a price model.

3.1. The return model

The Easton and Harris's model is expressed as follows:

$$P_{it} = BV_{it} + EPS_{it} \quad (1)$$

Where P_{it} is the stock price of firm i at the end of period t , BV_{it} is the book value of the share of firm i at the end of period t , and finally EPS_{it} refers to the earnings per share of the company (i) produced during period (t). Equation (1) implies:

$$\Delta P_{it} = \Delta BV_{it} + \Delta EPS_{it} \quad (2)$$

However, the change in the book value of the firm is the retained earnings:

$$\Delta BV_{it} = \Delta EPS_{it} - D_{it} \quad (3)$$

With D_{it} referring to Dividend per share of firm i paid during the period t .

Replacing the change in the carrying value by its expression in (3) and dividing by P_{it-1} the relationship becomes:

$$\frac{\Delta P_{it} + D_{it}}{P_{it-1}} = \frac{EPS_{it}}{P_{it-1}} + \frac{\Delta EPS_{it}}{P_{it-1}} \quad (4)$$

Where P_{it-1} is the stock price of firm i at the end of the period $t-1$. However, since $\frac{\Delta P_{it} + D_{it}}{P_{it-1}} = R_{it}$ is the market return of firm i during period t , we have consequently:

$$R_{it} = \frac{EPS_{it}}{P_{it-1}} + \frac{\Delta EPS_{it}}{P_{it-1}}$$

Thus, Easton and Harris's (1991) valuation model is expressed as follows:

$$R_{it} = \alpha_0 + \alpha_1 \frac{EPS_{it}}{P_{it-1}} + \alpha_2 \frac{\Delta EPS_{it}}{P_{it-1}} + \varepsilon_{it} \quad (5)$$

Where α_0 is the intercept; α_1 and α_2 are the regression coefficients that show the correlation between the accounting variables EPS (Δ EPS) and stock returns. They measure the effect of the variation of stock returns resulting from a variation of EPS and Δ EPS; finally ε_{it} refers error terms.

Easton and Harris's model is a return valuation model that measures the mean annual information content of the returns of the explanatory variables for the return of the dependent variable. Easton (1999) provides some additional insights on the interpretation of the slope coefficients α_1 and α_2 . He explains that the coefficient α_1 is a proxy for the association between the stock price and the book values of equity per share. Moreover, the coefficient α_2 measures the association degree between stock prices and earnings per share. In this paper, we use Easton and Harris's model and we test the following equation using quarterly data for the period 2008-2013:

$$R_{it} = \gamma_0 + \gamma_1 \frac{EPS_{it}}{P_{it-1}} + \gamma_2 \frac{\Delta EPS_{it}}{P_{it-1}} + \varepsilon_{it} \quad (6)$$

Where R_{it} is equal to (Price of firm i at the end of period t – Price of firm i at the end of quarter $t-1$)/Price of firm i at the end of period $t-1$, EPS_{it} : Earnings per share for firm i in period t , P_{it-1} : Stock price of firm i at the end of quarter $t-1$, ΔEPS_{it} : Earnings per share for firm i in quarter t - Earnings per share for firm i in quarter $t-1$, finally ε_{it} refers to error terms.

Equation (6) is also tested for each year separately and as well for the whole sample. It allows analyzing the consistency of the results over time. Furthermore, we test the effect of the Global Financial Crisis (GFC) and for that two sub periods are envisaged: the first one (2008-2010) includes the early years of the GFC and the second one corresponds to the recovery period 2011-2013.

3.2. The price model

Feltham and Ohlson (1995) developed a price model that relates the book values of equity and earnings with stock price. The model is expressed as follows:

$$P_{it} = \beta_0 + \beta_1 BVPS_{it} + \beta_2 EPS_{it} + \omega_{it} \quad (7)$$

Where, P_{it} is the stock price of firm i at time t , $BVPS_{it}$ is the book value of equity of firm i at time t , divided by common shares outstanding, EPS_{it} : Net income divided by common shares outstanding of firm i at time t , ω_{it} corresponds to error terms.

The Feltham and Ohlson’s model is used to measure the mean annual association between book values of equity, earnings, and stock prices. The model has been used to assess the overall value relevance of the accounting variables: equity and earnings measured in accordance of IFRS. In this study all the variables are related to quarterly periods. Thus the following model was used:

$$P_{it} = \delta_0 + \delta_1 BVPS_{it} + \delta_2 EPS_{it} + \mu_{it} \quad (8)$$

Where P_{it} is the stock price of firm i 3 months after the end of year t , $BVPS_{it}$ is the book value of equity of firm i at the end of fiscal year t , divided by common shares outstanding, EPS_{it} is the net income divided by common shares outstanding of firm i for fiscal year t , μ_{it} refers to the error terms.

As we expect that the value relevance of accounting information prepared under IFRS is also affected by the conditions in the market, additional tests are carried out. For that, the whole period 2008-2013 is split in two sub periods: 2008-2010 which is the period close to the GFC and 2011-2013 which is considered as a recovery period. The equation that includes the effect of the GFC is the following:

$$P_{it} = \theta_0 + \theta_1 BVPS_{it} + \theta_2 EPS_{it} + \theta_3 PostGFC + \theta_4 BVPS_{it} * PostGFC + \theta_5 EPS_{it} * PostGFC + \vartheta_{it} \quad (9)$$

PostGFC is a dummy coded 1 during the recovery period namely for the years 2011 2012 and 2013, and 0 otherwise. Coefficients θ_4 and θ_5 reflect the conditional effect of the variables EPS and BVPS on Pit. If earnings and book value reported during the recovery period provide greater value relevance, then these coefficients (θ_4 and/or θ_5) are significantly positive. The explanatory power of the model measured by R^2 allows assessing the information content of earnings and equity in the value creation. It shows the ability of earnings to reflect the information conveyed in the financial market and incorporated into the market price of the firm. A greater R^2 indicates higher accounting quality. Accounting information is able to reflect the economic reality of the business in terms of relevant information.

3.3. Research Hypotheses

The objective of IFRS is to help economic entities to provide to capital providers high quality accounting information. To reach such objective, disclosed information related to earnings and book value of equity is expected to be relevant. Following several studies (i.e. Francis and Schipper (1999)), the level of adjusted R^2 is used as a measure of the explanatory power of equity and earnings and so as measurement of value relevance. Thus, in this paper the following hypothesis is taken into account:

Hypothesis H1: Accounting information, earnings and equity, prepared under IFRS is value relevant.

4. Data and descriptive statistics

The sample use in this paper comprises 12 banks whose shares are traded on Dubai Financial Market (DFM) from January 2008 till March 2014. The data have been collected for all years from publicly available sources (i.e. DFM and firms’ websites). After adjustment, the final sample includes 214 firm-quarterly observations. Table 1 reports the names of the population of listed banks and other general information. In the sample 91.6% of banks are audited by one of the big four international public accounting firms.

Table 1. Sample presentation

Company name	Date of Listing	Date of establishment	Auditor	Authorized Capital
(AJMANBANK) AJMAN BANK PJSC	Jun 22, 2008	May 1, 2008	KPMG	AED 1,000,000,000
(ALSALAMSUDAN) AL SALAM BANK SUDAN	Jun 5, 2008	May 25, 2005	Mubarak El-Awad & Co.	367,200,000

Company name	Date of Listing	Date of establishment	Auditor	Authorized Capital
(AMLAK) Amlak Finance P.J.S.C	Mar 21, 2004	Nov 11, 2000	Ernst & Young	1,500,000,000
(CBD) Commercial Bank of Dubai P.S.C.	Apr 1, 2003	Jul 3, 1969	ERNST & YOUNG	2,242,187,173
(DIB) Dubai Islamic Bank	Mar 26, 2000	Mar 12, 1975	Deloitte & Touche	3,953,751,107
(EIB) Emirates Islamic Bank PJSC	May 21, 2005	Oct 4, 1975	Ernst & Young	3,930,421,875
(EIBANK) Emirates Investment Bank PJSC	Apr 10, 2005	Nov 1, 1976	Ernst & Young	65,000,000
(EMIRATESNBD) Emirates NBD PJSC	Oct 16, 2007	Jul 16, 2007	Ernst and Young	5,557,774,724
(GFH) Gulf Finance House B.S.C	May 14, 2006	Nov 6, 1999	KPMG - ERNST & YOUNG	3,571,120,659
(MASQ) Mashreqbank Psc	Apr 1, 2000	Jan 1, 1967	Deloitte & Touche	1,690,769,750
(SALAM_BAH) Al Salam Bank - Bahrain	Mar 26, 2008	Jan 19, 2006	Ernst & Young	2,140,930,752
(TAMWEEL) TAMWEEL PJSC	Jul 10, 2006	Nov 1, 2000	Deloitte & Touche	1,000,000,000

Table 2 provides descriptive statistics of variables used in the paper. On average, the banks included in the sample are profitable during the whole period, 2008-2013, earnings deflated by the market price at the beginning of the period are equal to 0.022. The closing price for the companies in the sample averaged AED 2.495, while for EPS it stands at AED 0.346 and for BVPS it is only AED 2.903. However, the change in earnings per share scaled by the market price at the beginning of the period ($\frac{\Delta EPS_{it}}{P_{it-1}}$) is varying over time. It is negative in 2008 and 2009 and positive in 2011 and 2013. Moreover closing prices decrease over years: from AED 15.38 in 2009 to AED 9.99 in 2013, while book values per share increase from AED 43.7 in 2010 to AED 52 in 2013.

Table 2. Descriptive statistics

		Observations	Mean	SD	Min	Max
2008	R_{it}	37	-0.168	0.259069	-0.71875	0.25
	$\frac{EPS_{it}}{P_{it-1}}$	38	0.012	0.01624	-0.05269	0.045119
	$\frac{\Delta EPS_{it}}{P_{it-1}}$	38	-0.008	0.021023	-0.09012	0.027772
	PostGFC	48	0	0	0	0
	P_{it}	37	88.985	231.2687	0.84	990
	EPS_{it}	42	9.672	21.53738	1.004988	78.55628
	$BVPS_{it}$	47	0.378892	0.960253	-0.16704	5.450484
2009	R_{it}	36	-0.03076	0.333321	-0.69944	1.278261
	$\frac{EPS_{it}}{P_{it-1}}$	36	0.004581	0.111599	-0.58812	0.221783
	$\frac{\Delta EPS_{it}}{P_{it-1}}$	36	-0.01428	0.100342	-0.55974	0.080761
	PostGFC	48	0	0	0	0

		Observations	Mean	SD	Min	Max
2010	P_{it}	36	15.38944	37.06338	0.73	143.3
	EPS_{it}	41	16.1463	46.66992	0.970533	277.3513
	$BVPS_{it}$	44	0.8807	3.143908	-2.09372	19.33989
	R_{it}	34	-0.04552	0.15343	-0.49462	0.18
	EPS_{it}/P_{it-1}	34	0.010527	0.071397	-0.34952	0.154076
	$\Delta EPS_{it}/P_{it-1}$	34	0.052908	0.335642	-0.28432	1.917998
	$PostGFC$	48	0	0	0	0
2011	P_{it}	34	12.47853	30.02801	0.47	99
	EPS_{it}	44	43.74056	112.4014	0.940704	448.7795
	$BVPS_{it}$	44	1.115329	4.170325	-2.43995	24.56963
	R_{it}	36	-0.01795	0.192378	-0.40741	0.833333
	EPS_{it}/P_{it-1}	36	0.024565	0.045468	-0.10771	0.158856
	$\Delta EPS_{it}/P_{it-1}$	36	0.146663	0.924605	-0.22217	5.52894
	$PostGFC$	48	1	0	1	1
2012	P_{it}	36	11.38681	28.25689	0.38	101.5
	EPS_{it}	44	47.98863	124.8045	0.878597	478.7839
	$BVPS_{it}$	44	1.197596	4.140813	-0.13757	23.36745
	R_{it}	36	0.056639	0.28255	-0.425	1.2
	EPS_{it}/P_{it-1}	36	0.05209	0.121546	-0.0358	0.740102
	$\Delta EPS_{it}/P_{it-1}$	36	-0.00111	0.176914	-0.76333	0.682236
	$PostGFC$	48	1	0	1	1
2013	P_{it}	36	8.620944	20.65384	0.42	85
	EPS_{it}	44	52.3713	137.8117	0.637345	529.8636
	$BVPS_{it}$	44	1.340897	4.549094	-0.02083	27.84
	R_{it}	35	0.15614	0.256805	-0.14754	1.206736
	EPS_{it}/P_{it-1}	35	0.032823	0.029914	-0.00867	0.142481
	$\Delta EPS_{it}/P_{it-1}$	35	0.004688	0.016795	-0.02711	0.066852
	$PostGFC$	48	1	0	1	1
All	P_{it}	35	9.998857	23.01265	0.49	95
	EPS_{it}	44	50.91311	130.4928	0.588119	507.6567
	$BVPS_{it}$	44	1.675343	5.064218	-0.00442	25.72
	R_{it}	214	-0.00948	0.27001	-0.71875	1.278261
	EPS_{it}/P_{it-1}	215	0.022754	0.07763	-0.58812	0.740102
	$\Delta EPS_{it}/P_{it-1}$	215	0.029641	0.409034	-0.76333	5.52894
	$PostGFC$	288	0.5	0.50087	0	1
Quarterly	P_{it}	214	24.95785	102.7447	0.38	990
	EPS_{it}	259	37.25418	106.8119	0.588119	529.8636
	$BVPS_{it}$	267	1.090045	3.872638	-2.43995	27.84
Annually	P_{it}	25	2.495200	1.370365	0.810000	6.140000
	EPS_{it}	25	0.346289	0.325088	-0.04365	1.605316
	$BVPS_{it}$	25	2.903597	1.423952	0.998353	5.218481

5. Empirical investigation

Table 3 presents the results of the estimation of equation (6) using different samples. The tests are carried out first for each year from 2008 to 2013. Then sub-periods are taken separately in a way that allows taking into consideration the effect of the Global financial Crisis (GFC). Specifically, we consider the sub-period

2008-2010 that corresponds to the difficult period, and the recovery period, 2011-2013. Finally, we carry out empirical investigations for the whole period.

Overall, it can be seen that the coefficient of EPS γ_1 is positive and significant for the years 2008, 2009, 2010, 2011 and 2013 at different risk levels. These results indicate that there is an association between the performance of the business as measured by earnings and its performance in the stock market. The adjusted R^2 for the pooled regression is 5.34%. However, a comparative analysis of the annual results is showing some differences. In fact, the coefficient γ_1 is not significant at the same level for all years. For the years 2008, 2009 and 2010, it is positive and significant at 1% and 5% levels. Nevertheless, it is not significant in 2012 and significant only at 10% level in 2011 and 2012. Furthermore, the level of adjusted R^2 is decreasing from 2008 to 2013. The highest value was 47.38% in 2009 and 2.77% in 2012. The explanatory power of the earnings' levels for stock returns seems to decrease in the recovery period. In contrast, the explanatory power of the earnings changes measured by γ_2 is insignificant in the majority of tests. This result indicates that earnings change is not significantly associated with returns.

This last result means that the listed banks in the DFM continued making profits during and after the crisis that was due partly to the generous money injection by financial authorities in the capital of banks during the crisis. However, it seems that increasing earnings did not have an effect on their stock prices.

These findings could find support in the estimations carried out for the sub-periods 2008-2010 and 2011-2013 in Table 3. Overall, the results are more significant during the sub-period 2008-2010. The earnings coefficient is positive and significant at 1% level and the adjusted R^2 is 15.9% while it is only 1.45% for the sub-period 2011-2013.

Table 3. Returns-earnings models

$$R_{it} = \gamma_0 + \gamma_1 \frac{EPS_{it}}{P_{it-1}} + \gamma_2 \frac{\Delta EPS_{it}}{P_{it-1}} + \epsilon_{it} \quad (6)$$

	γ_0	γ_1	γ_2	Adjusted R^2	F (Pr>F)	N
Year 2008	-0.247	7.267	3.677	22.63%	6.265	37
	<i>-3.223***</i>	<i>1.860*</i>	<i>1.242</i>		<i>0.004***</i>	
Year 2009	-0.114	5.160	-4.199	47.38%	16.758	36
	<i>-2.524**</i>	<i>5.041***</i>	<i>-3.688***</i>		<i>0.000***</i>	
Year 2010	-0.053	0.882	-0.024	11.76%	3.201	34
	<i>-2.115**</i>	<i>2.509**</i>	<i>-0.329</i>		<i>0.055*</i>	
Year 2011	0.015	-1.292	-0.009	5.09%	1.939	36
	<i>0.426</i>	<i>-1.736*</i>	<i>-0.258</i>		<i>0.159</i>	
Year 2012	0.060	-0.074	-0.235	2.77%	0.471	36
	<i>1.116</i>	<i>-0.155</i>	<i>-0.715</i>		<i>0.628</i>	
Year 2013	0.056	3.382	-2.389	4.31%	1.767	35
	<i>0.826</i>	<i>1.782*</i>	<i>-0.707</i>		<i>0.187</i>	
2008-2010	-0.097	1.480	-0.026	15.91%	11.030	107
	<i>-4.085***</i>	<i>4.610***</i>	<i>-0.217</i>		<i>0.000***</i>	
2011-2013	0.072	-0.152	-0.047	1.45%	0.765	107
	<i>2.638***</i>	<i>-0.463</i>	<i>-1.033</i>		<i>0.467</i>	
All	-0.027	0.809	-0.054	5.348%	5.961	214
	<i>-1.409</i>	<i>3.407***</i>	<i>-1.205</i>		<i>0.003***</i>	

(a) *t*-values are reported in italics below the coefficient estimates

(b) (*), (**), (***) denote statistical significance at the 10, 5 and 1% level, respectively.

Table 4 presents the output of the estimations of the price model of Feltham and Ohlson (1995) for the entire period 2008-2013 while Table 5 provides additional evidence by showing results of the estimation of equation (9). This latter, includes the dummy variable $PostGFC$ which tests the sensitivity of Feltham and Ohlson (1995) model to the GFC.

The findings seem confirming the conclusions brought by previous tests since the coefficient δ_2 and θ_2 are positive and significant at 1% and 5%, respectively and the adjusted R^2 increases from 5.92% to 19.33%. This result corroborates the association between market valuation and accounting valuation. It also shows that explanatory power of accounting data used in the price model is sensitive to the GFC. The coefficient θ_5 is negative and significant at 1% level. It indicates that value relevance of earnings measured using IFRS is decreasing during the recovery period. The association between the market price of firms and their book value is not statistically significant for equations (8) and (9).

Table 4. Price-earnings models

$$P_{it} = \delta_0 + \delta_1 BVPS_{it} + \delta_2 EPS_{it} + \mu_{it} \quad (8)$$

Dependent variable: P_{it}			
	(1)	(2)	(3)
Constant	1.816	2.223	1.829
	<i>2.896***</i>	<i>5.471***</i>	<i>2.763***</i>
$BVPS_{it}$	0.234		0.217
	<i>1.201</i>		<i>0.757</i>
EPS_{it}		0.785	0.099
		<i>0.910***</i>	<i>0.079</i>
Adjusted R^2	5.90%	3.50%	5.92%
F (Pr>F)	1.442	0.828	0.693
	<i>0.242</i>	<i>0.372</i>	<i>0.510</i>
N	25	25	25

(a) *t*-values are reported in italics below the coefficient estimates

(b) (*), (**), (***) denote statistical significance at the 10, 5 and 1% level, respectively.

Table 5. Price-earnings models with dummy variable

$$P_{it} = \theta_0 + \theta_1 BVPS_{it} + \theta_2 EPS_{it} + \theta_3 PostGFC + \theta_4 BVPS_{it} * PostGFC + \theta_5 EPS_{it} * PostGFC + \vartheta_{it} \quad (9)$$

Dependent variable: P_{it}			
	(1)	(2)	(3)
Constant	1.925	1.388	1.901
	<i>2.348**</i>	<i>2.098**</i>	<i>2.568***</i>
$BVPS_{it}$	0.087		-0.420
	<i>0.333</i>		<i>-1.190</i>
EPS_{it}		2.736	5.034
		<i>1.429</i>	<i>1.936**</i>
$PostGFC$	-0.210	1.444	-0.981
	<i>-0.164</i>	<i>1.665</i>	<i>-0.788</i>
$BVPS_{it} * PostGFC$	0.286		1.397
	<i>0.723</i>		<i>2.479**</i>
$EPS_{it} * PostGFC$		-2.693	-7.549
		<i>-1.255</i>	<i>-2.535**</i>
Adjusted R^2	13.44%	14.74%	19.33%
F (Pr>F)	1.087	1.211	2.151
	<i>0.376</i>	<i>0.330</i>	<i>0.103*</i>
N	25	25	25

(a) *t*-values are reported in italics below the coefficient estimates

(b) (*), (**), (***) denote statistical significance at the 10, 5 and 1% level, respectively.

6. Conclusions

The aim of this paper is to analyze empirically the value relevance of accounting numbers using IFRS for a sample of banks listed in DFM during the period 2008-2013. The empirical investigation has been conducted using two models: the return model of Easton and Harris (1991) and the price model of Feltham and Ohlson (1995). As expected the results indicate that, overall, earnings are positively related to stock prices and stock returns. The earnings, measured according IFRS for banks listed in DFM, are found to be positively associated with their market value. The equity book value seems to be less associated with the market valuation. However, findings are not consistent over the different years analyzed. The results indicate that value relevance of accounting information has changed since 2011 which might raise the effect of the global financial crisis (GFC).

For the tests measuring the association degree between stock returns and earnings, findings reveal a significant explanatory power of earnings. This result is shown in tests related to the whole period and confirmed when the years are considered separately as the earnings coefficient is significantly positive. Nevertheless, tests indicate a decrease in the earnings' information content from 2008 to 2013 as the adjusted R^2 is decreasing significantly starting from 2012. This result supports a lower performance of accounting information during the recovery period.

The complementary tests performed, using a price valuation model, are in general in line with above results. Earnings and equity book value are together value relevant for investors. However the book value of equity taken alone is not significantly associated with stock prices. In addition the findings are confirming the decrease in the association degree between stock prices and accounting numbers after 2010.

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