



# The value relevance of unrealized gains and losses recognized under IAS 39 Evidence from Kuwait

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## Abstract

**Purpose** – The study aims to examine the role of unrealized gains and losses recognized under international accounting standards (IAS) 39 in explaining stock prices for investment companies listed on the Kuwait Stock Exchange (KSE), and how the inclusion of unrealized gains and losses in income numbers affect the incremental explanatory power of earnings.

**Design/methodology/approach** – The study utilizes Ohlson's (1995) valuation model combined with a technique developed by Theil (1971) that has been applied in several prior studies.

**Findings** – The results of the cross-sectional regression indicate that net income and book values jointly and individually are positively and significantly related to stock prices; the incremental information content of net income is greater than that of book values; the inclusion of unrealized gain in income numbers increases the explanatory power of the model; and the incremental information content of net income before unrealized gains and losses is lower than that of book value. Thus, including unrealized gains and losses from investment in net income enhances the incremental information content of earnings. Our overall results show that unrealized gains and losses play an important role in explaining stock prices for investment companies in Kuwait, and that including them in the income numbers increases the incremental explanatory power of earnings.

**Originality/value** – This study is original because it is the first to empirically investigate the role of unrealized gains and losses recognized under IAS 39 in explaining stock prices for investment companies listed on the KSE and how the inclusion of unrealized gains and losses in income numbers affect the incremental explanatory power of earnings.

**Keywords** Kuwait Stock Exchange, IAS No 39, Unrealized gains and losses

**Paper type** Research paper

## 1. Introduction

The trend toward the use of fair value accounting steadily has prevailed among accounting rule-making authorities across the world during the past two decades. The US Financial Accounting Standards Board (1991, 1993, 1998) (FASB) took the initiative by issuing several fair value-related Statements of Financial Accounting Standards (i.e. SFAS No. 107, "Disclosures about Fair Value of Financial Instruments"; SFAS No. 115, "Disclosures about Fair Value of Financial Instruments"; and SFAS No.133, "Accounting for Derivative Instruments and Hedging Activities"). The International Accounting Standards Commission (IASC) joined the trend and issued a number of fair value accounting standards, including:



- international accounting standards (IAS) 32, “Financial Instruments: Disclosure and presentation” in 1995;
- IAS 39, “Financial Instruments: Recognition and Measurement” in 1998;
- IAS 40, “Investment Property” in March 2000; and
- IAS 41, “Agriculture” in December 2000.

In 2005, The [International Accounting Standards Board \(2003a, 2003b, 2005a, 2005b, 2008\)](#) (IASB), which was formed in 2001 to replace the IASC, issued International Financial Reporting Standards (IFRS) 7, “Financial Instruments: Disclosures” to replace some of the requirements in IAS 32.

Of particular interest to the current study is IAS 39, which requires the use of fair value in accounting for special types of financial instruments and the inclusion of specific gains and losses resulting from changes in the fair value in the income statement. Fair value advocates argue that the fair value approach produces more useful information that better values the entity’s investments. They argue that fair value accounting eliminates the inconsistency of the lower-of-cost-and-market approach, which recognizes decreases in values of securities while ignoring their value increases, and that it enhances the main objective of financial reporting of preparing financial statements that “fairly” present the entity’s value ([Shim and Larkin, 1998](#)).

The purpose of this study is to contribute to the international fair value literature by examining the value relevance of fair value accounting for investment in securities made under IAS No. 39 in Kuwait. All listed companies on the Kuwait Stock Exchange (KSE) have been using international accounting standards in the preparation of financial statements since 1991, as required by the Kuwaiti Ministry of Commerce and Industry’s Resolution No. 18 of 1990. Our investigation is motivated by the shortage of empirical research in emerging markets on the value relevance of accounting numbers generated under international accounting standards, in general, and the information content of fair value information provided by IAS No. 39, in particular. Hence, the current study aims at participating in filling the deficiency of empirical examination of this important issue in emerging capital markets.

The empirical evidence provided in the current study on the value relevance of fair value information should be useful to the IASC, and other local accounting regulators who are interested in knowing whether fair value numbers made available by IAS No. 39 are value-relevant to participants in the less-sophisticated capital markets of developing countries.

The study utilizes [Ohlson \(1995\)](#) valuation model, which expresses stock prices as a function of both book value of equity and earnings and uses statistical association between stock prices and both earnings and book values to measure their value-relevance. The study uses a technique developed by [Theil \(1971\)](#) that has been applied by several related studies to compare the incremental explanatory power of earnings and book values ([Collins et al., 1997](#); [Harris et al., 1994](#); [Bao and Chow, 1999](#); [El Shamy and Kayed, 2005](#)). The technique decomposes the combined explanatory power of earnings and book values into three components:

- (1) the incremental explanatory power of book value of equity;
- (2) the incremental explanatory power of earnings; and
- (3) the explanatory power common to both book values and earnings.

The study specifically examines the role of unrealized gains and losses recognized under IAS 39 in explaining stock prices for investment companies in Kuwait and how the inclusion of unrealized gains and losses in income numbers affects the incremental explanatory power of earnings. We decompose earnings for our sample of investment companies into two components:

- (1) earnings before unrealized gains and losses recognized under IAS 39; and
- (2) the unrealized gains and losses.

We compare the incremental explanatory power of net income to that of net income before unrealized gains and losses to examine how unrealized gains and losses affect the incremental explanatory power of earnings.

Our results show that unrealized gains and losses play a role in explaining stock prices for investment companies and that the inclusion of them in earnings increases the incremental explanatory power of earnings.

The remainder of this paper is organized as follows:

- Section 2 presents background information about fair value accounting under IAS No. 39 and provides a literature review of related prior research.
- Section 3 describes the research methodology used to test the value relevance of unrealized gains and losses reported under IAS 39.
- The empirical results of the study are presented in Section 4 and concluding remarks are, finally, provided in Section 5.

## **2. Accounting for financial instruments under international generally accepted accounting principles**

IAS No. 39, Financial Instruments, Recognition and Measurement, establishes guidance for the recognition and measurement of specific kinds of financial instruments. Presentation requirements for financial instruments in the financial statements are laid out in IAS 32 “Financial Instruments: Presentation”, while requirements for disclosing information about financial instruments are included in IFRS 7, Financial Instruments: Disclosures.

IAS 39 has become effective for fiscal years beginning after January 1, 2001, and uses the same definition mentioned in IAS 32 for financial instrument. Under IAS 32 (par. 11), financial instrument is defined as any contract that gives rise to both a financial asset of one enterprise and a financial liability or equity instrument of another enterprise. IAS 39 is limited to specific categories of financial assets, financial liabilities and some contracts to buy or sell nonfinancial items. In this section, we will briefly review the measurement of financial assets and financial liabilities under IAS 39.

### *2.1 Financial assets*

For the purpose of recognition and measurement, financial assets are classified under IAS 39 into four groups:

- (1) financial assets at fair value through profit and loss;
- (2) held-to-maturity (HTM) investments;
- (3) loans and receivables; and
- (4) available-for-sale (AFS).

### 2.2 *Financial assets at fair value through profit and loss*

This group includes two subcategories:

- (1) financial assets that are held for trading, and it includes financial assets acquired with the intent to sell in near term or those that held as part of a portfolio that are managed to maximize profit; and
- (2) any financial asset that is designated on initial recognition as one to be measured at fair value with fair value changes in profit and loss.

This later sub-category was introduced by the IASB to encourage the use of fair value accounting (Wiecek and Young, 2010). This group is initially recognized at fair value. Any transaction costs associated with the acquisition are expensed. Subsequently, financial assets, in this group, are measured at fair value at the balance sheet date and any unrealized gain or loss is included in the income statement.

All derivatives (except those designated hedging instruments) are treated as held for trading.

### 2.3 *HTM investments*

This group includes debt investments that the enterprise has both the positive intent and ability to hold to maturity and is not designated on initial recognition as assets at fair value through profit or loss or as AFS. HTM investments are initially recognized at fair value plus direct transaction costs incurred in the transaction. Subsequently, HTM investments are measured at amortised cost.

If an entity sells an HTM investment other than at insignificant amounts or as a consequence of a non-recurring, isolated event beyond its control that could not be reasonably anticipated, all of its other HTM investments must be reclassified as AFS for the current and next two financial reporting years.

### 2.4 *Loans and receivables*

This group of financial assets includes non-derivative financial assets with fixed or determinable payments that are not quoted in an active market, other than held for trading or designated on initial recognition as assets at fair value through profit or loss or as AFS. Loans and receivables, for which the holder may not recover substantially all of its initial investment, other than because of credit deterioration, should be classified as AFS. Like HTM investments, loans and receivables are measured at amortised cost.

### 2.5 *Available-for-sale*

AFS includes any non-derivative financial assets designated on initial recognition as AFS or any other instruments that are not classified as:

- loans and receivables;
- HTM investments; or
- financial assets at fair value through profit or loss.

AFS investments are initially recognized at fair value plus direct transaction costs. Subsequently, AFS investments are measured at fair value at the balance sheet date

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and any unrealized gain or loss is included in equity through the statement of changes in equity.

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### 2.6 Financial liabilities

Under IAS 39 financial liabilities are classified into two groups, financial liabilities at fair value through profit or loss and other financial liabilities measured at amortised cost using the effective interest method. The category of financial liability at fair value through profit or loss has two subcategories: financial liability that is designated by the entity as a liability at fair value through profit or loss on initial recognition and held for trading.

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## 3. Related literature

In this section, we briefly review studies related to the value relevance of fair value accounting conducted using US and international data.

### 3.1 Prior research using US data

Earlier fair value research has focused on investigating whether fair value information is associated with security market values. This stream of research has typically tested whether disclosures about fair value are incrementally informative over alternative measures (e.g. historical cost). Barth (1994) investigated the value relevance of the disclosure of fair value estimates of banks' investment securities and securities gains using a sample of all US banks whose financial statements data were on the 1990 Compustat Annual Tape. The study found such disclosed information to have incremental explanatory power over that provided by historical costs.

Eccher *et al.* (1996) examined the value relevance of fair value information made under SFAS No. 107 by banks for 1992 and 1993 and concluded that differences between fair values and book values of investment securities are associated with market-to-book ratios and the fair value disclosures for financial instruments other than securities are value-relevant only in limited setting. Similarly, Nelson (1996) examined the association between the market value of banks common equity and fair value estimates disclosed under SFAS No. 107 and reported results that support the notion that only disclosures of fair values of investment securities have incremental explanatory power relative to book value. The results found no reliable evidence that the fair value disclosures of other financial instruments such as loans, deposits or long-term debt have incremental explanatory power relative to book value.

Barth *et al.* (1996) reexamined the value relevance of fair value disclosures of loans for bank holding companies using a set of significant conditioning variables. Contrary to findings by Eccher *et al.* (1996) and Nelson (1996), they consistently found that disclosed fair value estimates of loans, securities and long-term debt disclosed under SFAS No. 107 provide significant explanatory power for bank share prices beyond that provided by related book value.

Park *et al.* (1999) examined the value relevance of fair values under SFAS No. 115 and found that fair values of AFS and HTM securities to be significantly related to the market value of equity for a sample of banks.

Carroll *et al.* (2003) examined the value-relevance of fair value information relative to historical cost information for investment securities using a sample of 143

closed-end mutual funds. This study's results reported evidence of a significant relation between stock prices and fair value estimates of investment securities.

Both Bell *et al.* (2002) and Aboody *et al.* (2004) examined the value relevance of fair values of employee stock options and found employee option expense to be value-relevant to investors.

In another stream of research, Robinson and Burton (2004) examined the market reaction to firms' voluntary adoption of fair value accounting for Employee Stock Options and found a positive and significant abnormal return in the three days around the announcements, suggesting that the market regards the fair value information as value-relevant.

Evidence documented by prior research suggesting the value relevance of fair value information has motivated accounting researchers to examine whether the market perceives the adoption of standards requiring the disclosure of fair values to be value-relevant. Cornett *et al.* (1996), for example, examined the relation between announcements increasing the likelihood of adopting the fair value accounting standard and stock prices of US financial institutions. They found that stock prices were negatively related to announcements increasing the probability of issuing fair value accounting standards.

### *3.2 Prior research using non-US data*

Easton *et al.* (1993) examined the association between the revaluation reserves that result from the revaluation of long lived assets allowed under the Australian generally accepted accounting principles (GAAP) and stock market prices and returns for a large sample of Australian firms over a ten-year period. They found that the level of the asset revaluation reserve has significant explanatory power for price-to-book ratio, particularly for subsamples of industrial firms with a relatively high level of revaluation activity.

Owusu-Ansah and Yeoh (2006) examined the relative value relevance of two alternative accounting treatments for unrealized gains on investment properties under Statement of Standard Accounting Practice No. 17: Accounting for Investment Properties and Properties Intended for Sale in New Zealand. They tested whether investment properties for which unrealized gains were recognized in the income statement were more value-relevant than those for which unrealized gains were recognized in the revaluation reserve (a stockholders' equity account). Their test results indicated that investors do not relatively value the two alternatives differently.

The literature review, therefore, shows that much of the previous research examining the value relevance of fair value disclosures of securities was conducted by US researchers (primarily examining fair value information made under FASB No. 107, No. 115 and No. 133). Research undertaking similar investigation outside the US market context is little.

## **4. The research design**

We use the Ohlson (1995) model that has been used extensively in previous studies. This model maintains that the value of a firm's equity can be expressed as a function of both its earnings and its book values as follows:



$$P_{it} = a_0 + a_1ER_{it} + a_2BV_{it} + e_{it} \quad (1) \text{ Unrealized gains and losses}$$

Where:

- $P_{it}$  = firm i's stock price at the end of year t.
- $ER_{it}$  = income per share for firm i during period t.
- $BV_{it}$  = book value per share for firm i at the end of period t.
- $e_{it}$  = other value-relevant information of firm i for period t orthogonal to earnings and book values.

Following Collins *et al.*'s (1997) methodology, we decompose the combined explanatory power of earnings and book value to compare the explanatory power that each have in relation to stock prices. This is done by decomposing the coefficient of determination of equation 1 into three components:

- (1) the incremental explanatory power of book values;
- (2) the incremental explanatory power of earnings; and
- (3) the explanatory power common to both earnings and book values.

To calculate these three components, the coefficients of determination for the following additional two equations are estimated:

$$P_{it} = b_0 + b_1ER_{it} + e_{it} \quad (2)$$

$$P_{it} = c_0 + c_1BV_{it} + e_{it} \quad (3)$$

$R^2$  obtained from equations 1, 2 and 3 are denoted  $R^2_{(ER, BV)}$ ,  $R^2_{(ER)}$  and  $R^2_{(BV)}$ , respectively. The difference between  $R^2_{(ER, BV)}$  and  $R^2_{(BV)}$  is used as a measure of the incremental explanatory power provided by earnings (Incr. ER). Likewise, The difference between  $R^2_{(ER, BV)}$  and  $R^2_{(ER)}$  is calculated to measure the incremental explanatory power provided by book value (Incr. BV). The remaining,  $R^2_{(ER, BV)} - \text{Incr. ER} - \text{Incr. BV}$ , is denoted as Incr. COM and is considered the explanatory power common to both earnings and book values.

To examine the effect of unrealized gains included in the income numbers on the value relevance of earnings, the above analysis has been repeated using a measure of earnings that does not include the unrealized gain and losses. The explanatory power obtained using the new measure of earnings (e.g. net income before unrealized gains and losses) was then compared to that obtained earlier (e.g. net income including unrealized gains and losses).

#### 4.1 Sample selection

The sample selected for the current study includes investment companies (e.g. belong to the investment sector) listed on the KSE for which earnings, book values and share prices were available for the study period, the year 2007.

Limiting our sample to investment firms is beneficiary for the regression analysis. The obtained results will be subject to a lower coefficient bias because assets and liability structures will be relatively homogenous. To control for the potential effects of extreme values, observations that were in the top and bottom two per cent of either earnings-to-price or book value-to-market value was removed. This sample selection

process yielded a final sample of 35 firms. Descriptive statistics for the study sample are presented in Table I and Table II.

## 5. The empirical results

### 5.1 The regression results using net income as a measure of earnings

Estimates of regressions 1, 2 and 3 are presented in Table III. Table III shows the regression coefficients and the related *t*-statistics. As shown in the table, the results of equation 1 demonstrate a significant association between stock prices and net income plus book values (net income and book values are significant at the 0.01 significance level).

As shown in Table III, the adjusted  $R^2$  for the pooled cross-sectional regression shows that earnings and book values together explain approximately 46 per cent of the

**Table I.**  
Descriptive statistics and correlation among variables for the sample: descriptive statistics for firm-year observations for years 2007<sup>a</sup>

Variable	<i>N</i>	Mean	<i>SD</i>	Median	Minimum	Maximum
NI	35	0.057	0.038	0.043	0.014	0.164
NIBUGL	35	0.044	0.037	0.036	-0.007	0.164
UGL	35	0.012	0.014	0.006	-0.005	0.045
BV	35	0.283	0.124	0.242	0.125	0.560
<i>P</i>	35	0.456	0.223	0.400	0.140	0.990

**Notes:** <sup>a</sup> All value figures are expressed in Kuwaiti Dinar (KD); Variables are defined as follows: NI = income per share, NIBUGL = net income before unrealized gains and losses per share; UGL = unrealized gains and losses per share, BV = book value per share and *p* = stock price per share

**Table II.**  
Descriptive statistics and correlation among variables for the sample: correlation among dependent and independent variables<sup>b</sup>

Variable	NI	NIBUGL	UGL	BV	<i>P</i>
NI	1	0.927**	0.199	0.609**	0.657**
NIBUGL	-	1	-0.183	0.515*	0.497**
UGL	-	-	1	0.253	0.425*
BV	-	-	-	1	0.596**
<i>P</i>	-	-	-	-	1

**Notes:** Variables are defined as follows: NI = income per share, NIBUGL = net income before unrealized gains and losses per share; UGL = unrealized gains and losses per share, BV = book value per share and *p* = stock price per share; \*\*Significant at 0.01; \*Significant at 0.05

**Table III.**  
The results of cross-sectional regression of prices on income and book values and the decomposition of the coefficients of variation: the models

Year	<i>N</i>	$a_1$	$a_2$	$R^2_{(NI \& BV)}$	$b_1$	$R^2_{(NI)}$	$c_1$	$R^2_{(BV)}$
2007	35	0.0467 (2.940)**	0.312 (1.964)*	0.461	0.657 (5.004)**	0.414	0.596 (4.267)*	0.336

**Notes:**  $P_{it} = a_0 + a_1NI_{it} + a_2BV_{it} + e_{it}$  (1);  $P_{it} = b_0 + b_1NI_{it} + e_{it}$  (2);  $P_{it} = c_0 + c_1BV_{it} + e_{it}$  (3); \*\*Significant at < 0.01; \*Significant at 0.05



cross-sectional variation in securities prices. The results obtained from equations 2 and 3 show that both net income and book values independently explain a significant portion of variations in stock prices. The adjusted  $R^2$  shows that net income alone and book value alone explain about 41 and 34 per cent, respectively, of the cross-sectional variation in securities prices.

Table IV also shows the results of the decomposition of the three adjusted  $R^2$ 's. As indicated in this table, the incremental information content of net income, Incr. NI, is 12.5 per cent., while the incremental information content of book values, Incr. BV, is only 4.7 per cent. The common explanatory power of earnings and book value, Incr. COM, is 28.9 per cent. The results, therefore, indicate that net income appears to add more to the overall explanatory power of the model than book values.

### 5.2 The role of unrealized gains and losses on the explanatory power of earnings

We examine the impact of including the unrealized gains and losses recognized under IAS 39 in explaining stock prices for investment companies and how the inclusion of unrealized gains and losses in income numbers affect the incremental explanatory power of earnings. We exclude the unrealized gains and losses from net income and use the resulting earnings number in regression equations 1 and 2 and compare the coefficients of determinations and incremental explanatory power of the new measure of earnings.

Table V presents estimates of regressions 1, 2 and 3. Table V shows strong association between stock prices and net income before unrealized gains and losses plus book values. The adjusted  $R^2$  for the regression indicates that net income before unrealized gains and losses and book values jointly explain about 36.7 per cent of the variation in securities prices. The results of equation 2 indicate that excluding unrealized gains and losses from net income reduces the explanatory power of new measure of earnings from 41.4 per cent, as shown in Tables III and IV to 22.4 per cent, as presented in Tables V and VI.

**Table IV.**  
The results of cross-sectional regression of prices on income and book values and the decomposition of the coefficients of variation: the decomposition of  $R^2$

Year	$R^2_{(NI \& BV)}$	$R^2_{(NI)}$	$R^2_{(BV)}$	Incr. NI	Incr. BV	Incr. COM
2007	0.461	0.414	0.336	0.125	0.047	0.289

**Notes:** Incr. NI =  $R^2_{(NI \& BV)} - R^2_{(BV)}$ ; Incr. BV =  $R^2_{(NI \& BV)} - R^2_{(NI)}$ ; Incr. COM =  $R^2_{(NI \& BV)} - \text{Incr. NI} - \text{Incr. BV}$

**Table V.**  
The impact of excluding unrealized gain from net income on the explanatory power of earnings: regression of prices on net income before unrealized gains and book values

Earnings measure	$N$	$a_1$	$A_2$	$R^2_{(NIBUGL \& BV)}$	$B_1$	$R^2_{(NIBUGL)}$	$C_1$	$R^2_{(BV)}$
NIBUGL	35	0.258 (1.624)	0.463 (2.913)	0.367	0.497 (3.288)	0.224	0.596 (4.267)	0.336

Table VI provides the results of the decomposition of adjusted  $R^2$ 's. The results reveal that excluding unrealized gains and losses from the measure of earnings reduces its incremental information content, compared to the results shown in Table II. The incremental information content of net income before unrealized gains and losses, Incr. NIBUGL, is relatively low at 3.1 per cent compared to 12.5 per cent for net income, as indicated in Table II. In contrast, the incremental information content of book values, Incr. BV is increased to 14.3 per cent from 4.7 per cent. The common explanatory power of earnings and book value, Incr. COM, is 19.3 per cent. Excluding unrealized gains and losses from net income makes book values add more to the explanatory power of the model than earnings.

Therefore, the results show that unrealized gains and losses play a role in explaining stock prices for investment companies and the inclusion of them in earnings increases the incremental explanatory power of earnings.

## 6. Summary and concluding remarks

The recent trends toward the use of fair value accounting motivated our study. The study contributes to the international fair value literature by examining the value relevance of fair value accounting for investment in securities made under IAS No. 39. Our investigation is motivated by the shortage of empirical research in emerging markets on the value relevance of the information content of fair value information provided by IAS No. 39. IAS 39 requires the use of fair value in accounting for special types of financial instruments and the recognition of gains and losses resulting from changes in the fair value of these instruments. The study utilizes the Ohlson (1995) valuation model combined with a technique developed by Theil (1971) and has been applied by several empirical studies to compare the incremental explanatory power of earnings and book values.

The study specifically examines the role of unrealized gains and losses recognized under IAS 39 in explaining stock prices for investment companies in Kuwait and how the inclusion of unrealized gains and losses in income numbers affect the incremental explanatory power of earnings. We decompose earnings for investment companies into two components:

- (1) earnings before unrealized gains and losses recognized under IAS 39; and
- (2) the unrealized gains and losses.

The results of the cross-sectional regression using a sample of investment companies listed on the KSE indicate that:

- net income and book values (both jointly and separately) have a positive and significant relationship with stock prices;
- the net income numbers have a greater incremental information than book values;

**Table VI.**

The impact of excluding unrealized gain from net income on the explanatory power of earnings: the Decomposition of  $R^2$

Earnings measure	$R^2_{(NIBUGL \& BV)}$	$R^2_{(NIBUGL)}$	$R^2_{(BV)}$	Incr. NIBUGL	Incr. BV	Incr. COM
Net income	0.367	0.224	0.336	0.031	0.143	0.193

- the inclusion of unrealized gain in income numbers increases the explanatory power of the model; and
- the incremental information content of net income before unrealized gains and losses is lower than that of book value.

Thus, including unrealized gains and losses from investment in net income enhances its incremental information content.

The empirical evidence provided in the current study on the value relevance of fair value information should be useful to the IASB, as well as other local accounting regulators who are interested in knowing whether fair value numbers made available by IAS No. 39 are value-relevant to participants in the less-sophisticated capital markets of developing countries.

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